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ABSTRACT

In the conceptual scheme for this research study, urban environments were viewed as related to personal well-being by control-seeking and support-seeking behaviors and the psychological consequences of obtaining these goals. Measures of predispositions to these behaviors were found to be related to observed behavior variables. Predispositions to dominant behaviors were defined as expected direct, forceful and authoritative behaviors by self, and these measures were related to expected degree of personal control over relations with environments. Subordinate dispositions were defined as preferences to follow the personal directions and examples of others, and these were associated with variable expectations with regard to the degree of this personal support. In-depth interviews were conducted to identify dimensions of work and home environment that may facilitate control and support. The attributes of the systems which facilitate personal control appear to differ, and often to conflict, with those which facilitate personal support. Attributes of both work and home environments were identified to permit analysis of the relative contribution of different environments to personal well-being. (Author/RLV)

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URBAN ENVIRONMENTAL FACTORS AND PERSONAL WELL-BEING

FINDINGS OF EXPLORATORY AND METHODOLOGICAL RESEARCH

Robert M. Griffin, Jr.
James R. Hassinger
Lauren B. Leveton

August, 1979

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Page

23 In Table 2-3 under Factor: Dominant

insert

Loading	Item
.62	Even if other people are difficult, I can get them to change their behavior

118 In Figure 4-2, change "PERSONAL Space" to "Personal space"

192 Table 6-7, last row, change "-.13" to "-.13*"; and change ".22" to ".22***"

197 Table 6-8. In the second row following "Self-Confidence Item" the correlations should read: ".29***", ".31***", "-.20**", and "-.24***"

The fifth row following "Self-Depreciation Item" the correlations should read "-.33***", "-.23***", ".25***", and ".31***"

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Findings of [redacted] Exploratory and Methodological Research

Robert M. Griffin, Jr.
James R. Hassinger
Lauren B. Leveton

Division of Man-Environment Relations
College of Human Development
The Pennsylvania State University
University Park, Pennsylvania

August, 1979

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Paul Brophy Urban Planner	Housing Director City of Pittsburgh
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D. Michael Murtha Environmental Design Consultant	ASMER Information Project Washington, D.C.
Richard Wakefield Systems Analyst	Center for the Study of Metropolitan Problems National Institute of Mental Health

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5-A

SUMMARY OF RESEARCH

This study was an exploratory and methodological investigation of the problem of the relation of urban environments to personal well-being. In the conceptual scheme for the research, urban environments were conceived to be related to personal well-being by control-seeking and support-seeking behaviors and psychological consequences of attaining these goals. The objectives of this research project were: (1) to develop measures of predispositions to these behaviors; (2) to develop measures of attributes of urban environments; and (3) to refine concepts of behavioral predispositions and environmental attributes.

Measures of behavioral predispositions were developed by factor analysis and Likert scaling. These measures were found to be related to observed behavior criterion variables. Predispositions to Dominant behavior were defined as expected direct, forceful, and authoritative behaviors by self. These measures were related variation in expected degree of personal control over relations with environments. Subordinate predispositions were defined as preferences to follow the personal directions and examples of others, and these were associated with variable expectations with regard to the degree of this personal support.

In-depth interviews were conducted to identify dimensions of work and home environment that may facilitate control and support. In methodological research, these dimensions were refined and cross-validated. Four systems which are conceived to facilitate goal-attainment: hierarchical, territorial, functional, and time systems. The attributes of these systems which facilitate personal control appear to differ, and often to conflict, with those which facilitate personal support. The systems were defined in terms of measurable, objective attributes that are analytically independent of behavioral response. Attributes of both work and home environments were identified in commensurate terms to permit analysis of the relative contribution of different environments to personal well-being. Adaptations to each environment appears to be affected by the other environment, and to vary with personal goals.

In addition to the accomplishment of these specified research objectives, this study explored the relationships of these variables to personal well-being and developed measures of psychological effects of failure to attain personal goals. Powerlessness and isolation appear to define these psychological effects, and preliminary measures of these states were found to be related to functional health impairment. In addition, the research suggested theoretical implications that may contribute to analysis of a variety of urban issues. Further research studies and applications were recommended.

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I. INTRODUCTION

The research described in this report is intended to contribute to improving the quality of urban environments and methods of environmental planning and design. These problems are studied in terms of concepts of the relationships of urban environments to health. It has been increasingly recognized that better concepts of environmental factors related to health effects are needed to prevent illness and to improve planning and design of urban environments (Hinkle and Loring, 1977). Progress toward both goals requires increased scientific understanding of the dimensions of environment that are relevant to behavior and well-being.

Thus, unlike much problem-solving research, this study does not apply a well-established theoretical framework to a societal problem which has not been previously investigated. From its inception, this project has been conceived as an effort to study an old problem -- the relationship of urban environments to personal well-being -- in a new conceptual frame of reference, but with the objective of developing a new product -- criteria for environmental planning and design. It is thus extraordinarily important for understanding this research to grasp its basic assumptions, and the working hypotheses and conceptual scheme derived from these assumptions.

Basic Assumptions

The assumptions for this study were derived from analysis and synthesis of previous research in a variety of disciplines which were conceived to be related to the problem of the relationship of urban environments to illness. These assumptions define the research problem. Because the review of literature which supports these assumptions is lengthy, its main conclusions have been condensed in this chapter. In addition, certain implicit assumptions, which have become explicit as the research progressed, have been specified. The full literature review accompanying the research proposal is contained in Appendix A of this report.

Effects of Urban Environments on Personal Well-Being

The first set of assumptions represent those which indicate the need for a new conceptual framework for the study of the relationships of urban environments to personal well-being.

The first assumption is that previous research has not established the relationships of urban environments to health. Findings of previous research are equivocal, contradictory and subject to a variety of interpretations. These assumptions were derived from previous research on the relation of urban environments to illness.

The second assumption is that epidemiological studies have rarely investigated attributes of urban environments relevant to behavior. There have been three mainstreams in this research in terms of conceptualizations of urban environments. The first has defined urban environments in terms of its social characteristics. These social attributes have been defined and measured in terms of demographic categories, social situations, or social events. These variables are not appropriate descriptors of environments: demographic categories and social events refer to only a few aspects of each persons' environment and fail to include the physical factors which also contribute to defining environments. Social situations are more inclusive descriptors of social contexts for behavior, but are abstractions intended to explain social relationships between actors and others according to theories of social control. These concepts define influences of society and social organization on behavior -- not the impact of the environment on the individual.

In the second approach, urban environments have been defined in terms of the perceptions of individuals. This permits analysis of the entire personal experience of the individuals with urban environments, but only in terms of subjective experience rather than objective reality. Urban environments are, however, not subjective phenomena, varying with individual perceptions; the improvement of urban environments to enhance personal well-being requires separation of objective factors from the variable perceptions of each individual for these factors.

The third approach avoids the problem of defining environments subjectively. Urban environments are defined in terms of their organization for planning, design, financing, development, and construction. The units of environment are such entities as urban renewal project areas, housing projects, or planned communities. This approach is deficient because these developmental units are not defined in terms of measurable attributes related to behavior or in terms of subdivisions of urban environments related to actual use. In such research, the relationship to behavior and health are as inconclusive as the environmental factors are imprecisely identified and measured.

The third assumption is that epidemiological studies have failed to explain variation in behavioral responses to urban environments. Analysis of studies of social influences on health suggests that overt patterns of behavioral response to urban environments vary systematically for groups exposed to the same socially-defined situational factors. This variation is not explained by social characteristics of these groups. Other studies of behavioral responses of individuals related to health have identified comparable characteristics of observed behavior which remain unexplained. The two bodies of research taken together -- one failing to explain variation in overt behavior by social structure and the other unable to explain similar differences in behavior by personality -- imply similar differences in behavioral responses to urban environments (Griffin, 1974).

Thus, these assumptions suggest that the difficulty in establishing the relationships of urban environments to health may be related both to failure to conceptualize and to measure urban environments appropriately, and failure to consider the possible effects of varying patterns of behavioral responses to urban environments. Weak and inconclusive findings may result from failure to identify environmental factors which impact overt behavior, but these may also vary with the behavioral patterns to which individuals or social groups may be predisposed. Failure to consider this variation may not only confound relationships of urban environments to health, but also prevent replication of findings of relationships in samples of different populations.

Relationship of Urban Environments to Personal Well-Being

Previous research on behavioral response to environments and on adaptive responses related to illness suggests concepts that may be useful for studying the relationship of urban environments to personal well-being. These form a basis for a series of assumptions concerning the processes which link environments to health effects.

The first assumption is that the salient aspects of urban environments are settings for socially significant behaviors. In this respect, this study draws upon some of the concepts and findings of ecological psychologists (Barker, 1968). In this perspective, the environment for behavior is defined in terms of objective, measurable social, physical and temporal attributes which are systematically interrelated. The environment is thus not defined in terms of subjective psychological phenomena; it is organized in bounded units which are not arbitrarily defined. Ecological psychologists use the term "behavior setting" to designate these environmental units; however, this study assumes that the most significant level of organization of both environment and behavior for the study of the relationship of urban environments to human well-being is organization for the performance of functions which are highly significant for human identity and meaning. Hence, this study does not assume that the urban environment is organized in terms of small-scale behavior settings for everyday life, but rather analyzes the environment in terms of its organization for important social functions, such as those related to family and work life.

The second assumption of this research is that behavioral responses to urban settings are goal-directed. This assumption is based on cognitive theories of behavior set forth by ecological psychologists, motivational theorists, environmental psychologists, and ethologists (Barker, 1968; Altman, 1975; Miller, Galanter and Pribram, 1960; Hinde, 1970; Deci, 1976). Goal-directed behavioral responses seek to achieve desired states to which individuals are predisposed, and thereby to maintain certain relationships to environments.

The third assumption is that behavioral responses to urban settings vary with the goals which individuals are predisposed to seek. This assumption stems from interpretation of previous research on social and individual behavior related to health and illness in terms of theories of goal-directed motivation. According to data reported in many of these studies, behavioral responses of individuals and groups to home and work settings vary in a manner which implies the seeking of different goals. However, as the investigators in these studies were unable to explain this variation by sociological and psychoanalytic perspectives on behavior, it is possible that this variation of behavior may be due to variation in goals of behavior.

The fourth assumption of the research is that individuals are predisposed to use certain patterns of behavior in seeking their goals. Based on a number of psychological tests, and observational studies of behavioral patterns, it appears that there are dichotomous traits or behavior patterns which are similar to the different patterns of behavioral responses of social groups and individuals which are unexplained in previous epidemiological research. This suggests that these various dichotomous behavioral chacteristics may be situation-specific manifestations of fundamental predispositions to contrasting patterns of behavior. This study does not, however, assume that these predispositions are necessarily dichotomous; rather, it assumes that the structure of predispositions is an empirical question. Thus, the critical assumption here is that goals are related to behavioral patterns so that seeking certain goals should be expected to be related to certain observable overt behaviors.

The fifth assumption is that feedback of the consequences of goal-directed behavior affects psychological states. Drawing again on theories of goal-directed behaviors, it is assumed that behavior is guided by feedback of consequences and that this results in variation in psychological states. These psychological states are conceived to depend on goals and on the degree to which goals are obtained.

The sixth assumption of the research is that the psychological states which result from failure to attain goals have deleterious effects.

According to Cassel (1967), an adequate model of social processes increasing susceptibility to illness would conceive social situations to provide social stimuli which elicit adaptive responses. Types of adaptive responses may be assumed to be functions of variable previous experiences and/or genetic endowments of individuals. Thus, if there are some psychological effects of feedback of the consequences of goal-directed behavior, then these effects may represent both environmental cognitions and psychological stimuli to organisms which trigger a variety of adaptive responses and health consequences. This conceptualization of the behavioral and psychological linkage between environmental factors and deleterious effects is consistent with the type of stimuli identified by other investigators to be triggers of adaptive responses (cf. Chapman, Hinkle and Wolff, 1960; Hinkle, 1959, 1961). Previous research has, in fact, identified a variety of such psychological states related to manifestations of illness, but has confounded environmental variables with psychological variables (in such concepts as "psychosocial stimuli") or confounded behavior variables with psychological consequences of behavior (in such concepts "cancer-prone" or "coronary-prone" personalities).

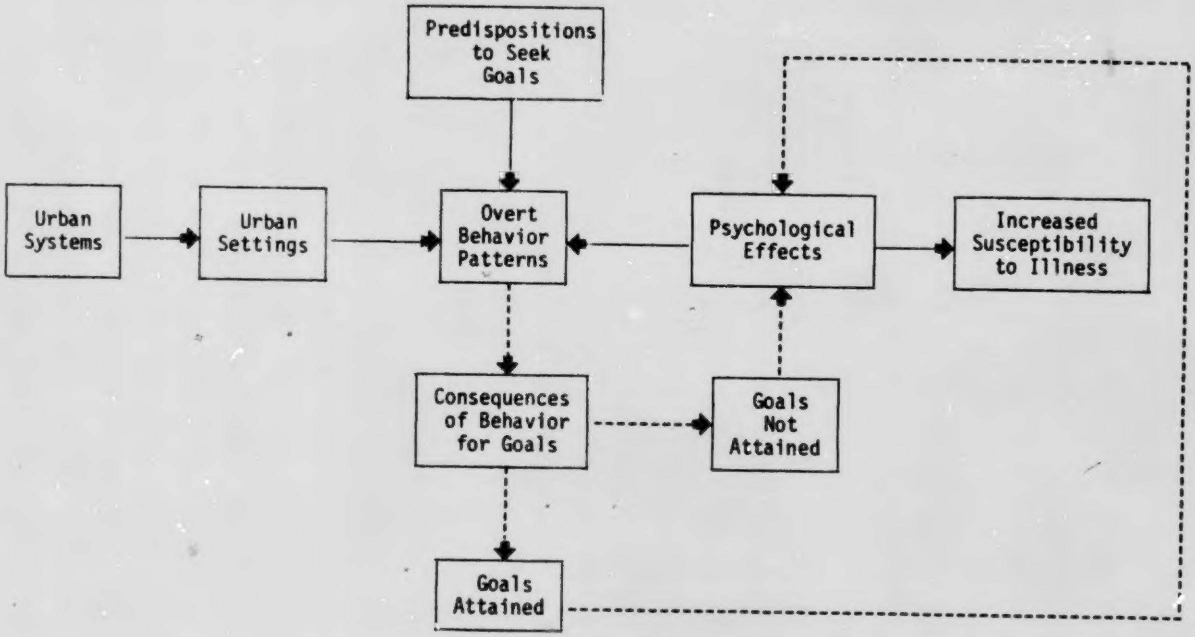
Basic Concepts

The foregoing set of assumptions form the basis for a general conceptual model for research. (See Figure 1-1) This conceptual model sets forth the general relationships among categories of variables which follow from the basic assumptions of the research. This model then raises the question of appropriate research strategy for testing the model.

It is obvious that the assumptions define a complex research problem. The assumptions, however, also clarify the research issues in establishing the relationships of urban environments to personal well-being. The most critical research issues are to identify the behavioral predispositions which mediate between urban settings and psychological states and the environmental factors which relate to these goal-directed behaviors. This requires both definition of concepts and development of measuring instruments. With well-defined concepts and appropriate measures, it would then be possible to determine the relationships between attributes of urban settings and behavioral responses, and the psychological and health consequences of these relationships, in cross-

Figure 1-1

General Conceptual Model



sectional research. If this proves productive, it would then be possible to validate the causal relationships which are assumed. Thus, the first step in research was conceived to be an exploratory and methodological study to define behavioral predispositions and environmental factors and to develop hypotheses and measures to use in a second stage of cross-sectional research.

Working Hypotheses

This research project was guided by certain working hypotheses with regard to behavioral predispositions, environmental factors, and psychological states. The previously-described assumptions and the working hypotheses form the basis for a conceptual model of the relationships between urban environments and personal well-being.

The first working hypothesis is that overt behavioral responses are directed to seeking either personal control over environments or social support from environments. This hypothesis was inferred from analysis of previous epidemiological research -- particularly sociological research -- and studies of animal behavior, both in their natural environment and in experimental studies of the effect of environmental manipulations on health (Griffin, 1974). Experimental studies of animals are regarded as a major source of evidence that urban environments are deleterious (Cassel, 1972). There is also a significant body of research with human subjects which suggests that social supports (Cobb, 1976) and personal control moderate the effects of environmental stress (cf. for example, Glass and Singer, 1972).

The second working hypothesis is that personal control is sought by self-directed behavior and social support is sought by conforming behavior. The basis for this hypothesis is research by Kohn and his associates on the relationship of value orientations to social class (Kohn, 1959, 1971, 1977; Pearlin and Kohn, 1966; Kohn and Schooler, 1969). According to these investigators, positive valuations of self-directed behavior are related to higher social class rank and positive valuations of conforming behavior are related to lower social class rank. These values are conceived to be formed as a result of occupational experiences, and are transmitted by parents to their children in the process of socialization. Based on this research, it was inferred that overt control-seeking behavior would be related to predispositions to self-direction and overt support-seeking behavior would be related to predispositions to conformity. It was also explicitly assumed, however, that neither self-direction nor conformity may prove to be the best descriptors of predispositions. Self-direction and conformity aptly describe unexplained differences in overt behavior among social groups of varying social class rank, and within social class groups, health-related differences in behavior between individuals who strive for success and advancement and those who do not. However, there are other, equally well validated studies of personality traits and behavioral patterns, such as research on Locus of Control (Rotter, 1966) and on Type A Behavior Pattern (Rosenman and Friedman, 1964), which were assumed to be equally possible predictors of overt control-seeking and support-seeking behavior, as well as concepts, devised from animal behavior, which have not been previously measured (Griffin, 1974). The concepts of self-direction and conformity were therefore used to designate the general characteristics of the behavioral predispositions assumed to be related to overt control-seeking and support-seeking behavior.

The third working hypothesis is that if individuals predisposed to seek personal control fail to attain this goal, they experience social press, and if individuals predisposed to seek social support fail to attain that goal, they experience social isolation. The term "social isolation" refers to a psychological state in which individuals feel that they are separated from significant groups. The term "social press" refers to a psychological state in which individuals feel that they are unable to control social transactions. These two psychological phenomena were inferred to be related to susceptibility to illness from analysis of previous research with regard to personality and psychological factors related to illnesses. These characteristics were reinterpreted and resynthesized in terms of the basic assumptions of the research. Thus, they are conceived to be psychological consequences of feedback of the results of goal-directed behavior as well as psychological stimuli which elicit adaptive responses.

The fourth working hypothesis is that if individuals predisposed to self-direction experience difficulties with personal control in their interaction with urban settings, then they are likely to experience social press; and if individuals predisposed to conformity experience difficulties with social supports in their interaction with urban settings, they are likely to experience social isolation. The basis of this hypothesis is synthesis of the previously-described basic assumptions and working hypotheses.

Conceptual Model

The foregoing working hypotheses define a set of specific relationships which are graphically represented in Figure 1-2. The research reported here is designed to define and to measure some of these variables and to explore their relationships.

The conceptual scheme in Figure 1-2 assumes that individuals seek social support from environments or personal control over environments and that these behaviors are both observable and related to measurable predispositions. It also assumes that failure to obtain social support has the psychological consequence of social isolation and failure to obtain personal control has the psychological consequence of social press. Both psychological states are conceived to be deleterious, both in terms of their emotional effects and their possible consequences for mental and physical health. Thus, the urban environmental factors related to human well-being are postulated to be those related to social support and to personal control. The first step in research, therefore, should be to define and to measure predispositions to these behaviors and the attributes of urban settings likely to be related to these predispositions. This first stage of research would then provide hypotheses for testing in subsequent cross-sectional and longitudinal research. Thus, this study is conceived to be the first of a three-stage research program.

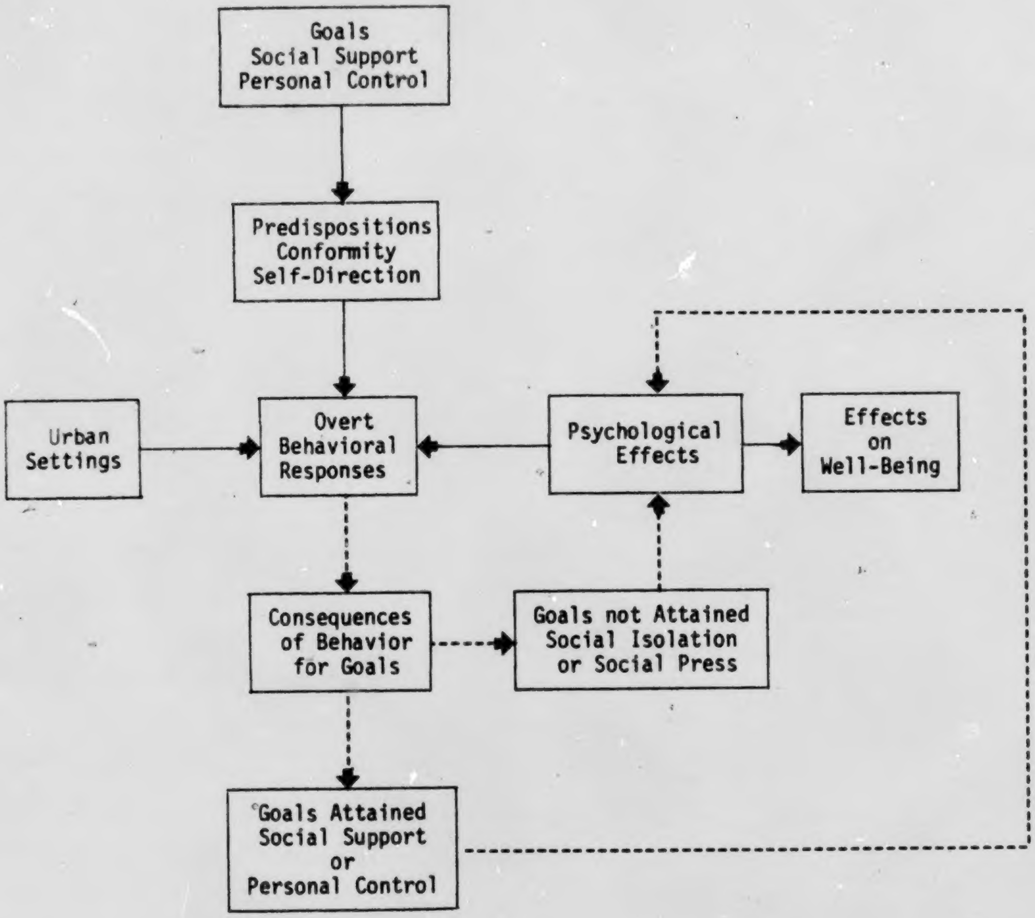
Scope of Research

This study is consequently an exploratory and methodological investigation. It has three objectives: (1) to identify and to measure

Figure 1-2

Conceptualization of Relationships Among

Variables in Working Hypotheses



predispositions to support-seeking and control-seeking behaviors; (2) to clarify and to specify objective attributes of urban environments related to these behavioral predispositions and to social isolation and social press; and (3) to develop hypotheses for subsequent testing in the second stage of research.

The research plan set forth two separate studies. The first was a laboratory experiment designed to refine initial concepts of behavior and to develop measures of predispositions to these behaviors. In this experiment, subjects were presented with conditions intended to elicit behavioral responses which could be observed and which could be correlated with attitudinal and self-reported behavioral measures of predispositions. These were essentially conditions of lack of control and lack of support. The objective was not, however, to study behavioral responses to urban environments, but rather to determine the relationship between self-reported predispositions and observed behaviors for the purpose of developing and validating concepts and measures of predisposition to support-seeking and control-seeking behaviors.

The second study was field research designed to specify measurable attributes of urban environments, and to explore the relationships between environmental attributes, behavioral predispositions and psychological effects. This study was intended to provide the primary basis for formulating hypotheses concerning environmental factors which are related to social support and to personal control.

The objectives of the research were achieved. Support-seeking and control-seeking behavioral patterns were identified and scales to measure predispostions to these behaviors were developed. Relationships of environmental perception to behavioral predispositions and to psychological states were explored and a limited set of objective environmental factors, with their constituent, measurable dimensions, were defined. These are hypothesized to relate to social isolation and social press by their effects of behaviors. The study thus established conceptual and methodological basis for further scientific research to establish relationships of the urban environment to human well-being and to identify criteria for environmental design. This is the primary significance of the research.

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This report presents findings in seven chapters. The next chapter presents the findings of research to develop measures of behavioral predispositions. In the third chapter, the results of exploratory field research is described. This is followed by a chapter in which measurable attributes of environment are specified. The next chapter reports the development of social isolation and social press measures and exploratory studies of relationship to well-being. In the sixth chapter, the findings of research are integrated in terms of theoretical perspectives and refined concepts of variables. In the final chapter, the conclusions drawn from the findings of the research are presented, including a discussion of further research and applications to urban problems.

II. MEASURES OF BEHAVIORAL PREDISPOSITIONS

The objective of the study reported in this chapter was to develop instruments to measure behavioral predispositions. According to the framework of basic assumptions for this research, individuals are predisposed to use certain patterns of behavior to achieve their goals. The working hypothesis was that individuals predisposed to conformity seek social support from their environment and individuals predisposed to self-direction seek personal control over their environment. It was recognized, however, that support-seeking or control-seeking may be related to traits other than conformity and self-direction. Although it is expected that measures of conformity will relate to seeking social support and measures of self-direction will relate to seeking personal control, measurements of other traits may also relate to these behavioral responses, and may relate to one another in such a manner as to indicate the existence of yet undiscovered predispositions. The objective was, therefore, to identify and to measure these predispositions.

General Methodology

The method of research proposed to accomplish this objective was a laboratory experiment. As predispositions are assumed to be manifested in overt control-seeking and support-seeking behavior, validation of working hypotheses concerning predispositions required eliciting and observing these behaviors. This implied use of laboratory procedures to control environmental conditions presented to subjects in order to elicit overt manifestations of control-seeking and support-seeking behavior. It was not assumed that laboratory procedures were appropriate to identify and to measure overt behavioral responses to urban settings. Laboratory conditions were used to present conditions intended to elicit control-seeking and support-seeking behavior.

The identification of behavioral predispositions also required determining whether or not overt behaviors manifested in the laboratory environment were related to internal predispositions which existed prior to exposure to laboratory conditions. Therefore, the research plan was to measure predispositions in terms of responses to questions concerning self-reported behaviors and attitudes and then present conditions to these subjects which were designed to elicit observable control-seeking or support-seeking behaviors. After developing scales to measure predispositions from self-report behaviors and attitudes, the relationship to observed support-seeking and control-seeking behavior would determine the degree to which overt behaviors could be predicted from pre-existing predispositions.

Research Procedures

Development of Measures

The first step was to review previously-published studies of behavioral characteristics that were similar to concepts of support-seeking and control-seeking behavior. The purpose of this search was to identify scales and items that measure self-reported behavior and attitudes about behavior for use as measures of predispositions. The primary sources for these measures were published social psychology tests and measures of personality traits. In addition, sociological concepts of behavioral responses of actors to others in social situations and ethological concepts of aggressive behavior were used to develop new measures of behavioral predispositions. Sources which were used are listed in Figure 2-1.

Some of the items had to be modified for use in this research. Some were rewritten to change references to attitudes about behavior in general to refer to attitudes about the behavior of self. This was necessary to insure that items measured the predispositions of respondents rather than their preferences about the behavior of others. Some were rewritten to eliminate overly-specific references to conditions under which respondents manifest behaviors. The reason for this modification was that the predispositions of interest are not conceived as situation specific. Many items were eliminated because they measured responses to societal conditions rather than the environment of the

Figure 2-1

Sources of Predisposition Items

Scale	Source	Year
Anomia	- Srole	(1962)
Dogmatism	- Rokeach	(1956)
F-Scale (Authoritarianism)	- Adorno	(1950)
Helplessness	- Gamson	(1961)
Locus of Control	- Rotter	(1966)
Machiavellianism	- Christie, et al.	(1956)
M-Factor	- Digman	(1974)
n Achievement	- McClelland	(1953)
Personal Competence	- Campbell, et al.	(1960)
Philosophy of Human Nature	- Wrightsman	(1964)
Powerlessness	- Neal & Seeman	(1962)
Self-Direction & Conformity	- Kohn & Schooler	(1969)
Intrinsic & Extrinsic Religious Orientation	- Allport & Ross	(1967)
Normative & Interpretative Paridigms	- Wilson	(1970)
Dominant & Subordinate Behavior	- Griffin	(1974)

individual. Many of the scales were inappropriate for use in their entirety for this reason. While a few scales measured conceptually-relevant predispositions, the time required to complete them prohibited use of all items. This would have prevented comparison of the predictive validity of other concepts and measures of predispositions.

The measures which were deemed to be most relevant to concepts of predispositions to control-seeking and support-seeking behaviors were Kohn and Schooler's (1969) measures of Self-Direction and Conformity and Rotter's (1966) measures of Locus of Control. Orientations to Self-Direction and Conformity have been measured by Kohn by a number of different attitudinal measures, but the most fully-developed set of measures were derived by factor analysis (Kohn and Schooler, 1969). There were 9 factors and 53 items in this analysis. To obtain measures to serve as indicators of Self-Direction and Conformity, the items which had the highest loadings on each factor were selected for inclusion in the study. With regard to Rotter's measures of Locus of Control, eight original or modified items were selected which had been reported to be strongly related to criterion variables in previous research or which were especially relevant to the concepts of behavior in this study. The measures which serve as an indicator of Self-Direction and Conformity and of External and Internal Control are set forth in Figures 2-2 and 2-3.

The remaining items used to measure predispositions were developed from review of previously-published research or had been developed in previous pilot studies on Dominant and Subordinate behaviors. A total of 90 items were selected for inclusion in a pre-test questionnaire to be administered to subjects prior to the experiment. (See Appendix B) The questionnaire also contained other questions concerning personal and social characteristics of subjects.

Measures of Overt Behavior

While the concepts of Self-Direction and Conformity were assumed to describe best the differences in behavior related to control-seeking and support-seeking, these are concepts of value orientations which have not been defined in terms of overt behavioral patterns. A basic assumption

Figure 2-2

Items Selected as Indicators of Self-Direction and Conformity[1]

The most important thing to teach children is absolute obedience to their parents.

It's all right to do anything you want as long as you stay out of trouble.

I think that most people can be trusted.[2]

Are you generally one of the first people to try something new or do you wait until you see how it's worked out for other people?

I take a positive attitude toward myself.

I wish I could have more respect for myself.

When things go wrong for you, how often would you say it is your own fault?

How often do you feel that you are about to go to pieces?

How often do your ideas and opinions differ from those of your friends?

---

[1] Items answered in terms of degree of agreement ("strongly agree" to "strongly disagree") or frequency ("very often" to "never").

[2] Item rewritten from question form: "Do you think that most people can be trusted?"

Source: Kohn and Schooler (1969).

Figure 2-3

Items Selected as Indicators of Locus of Control[1]

External Control

Bad breaks have sometimes prevented me from being an effective leader.[2]

Many times I feel that I have little influence over the things that happen to me.

Sometimes I feel that I don't have enough control over the direction my life is taking.

No matter how hard I try some people do not react to me as I want them to.[2]

Internal Control

There really is no such thing as "luck."

It is impossible for me to believe that chance or luck plays an important role in my life.

Becoming a success is a matter of hard work, luck has little or nothing to do with it.

When I make plans, I usually can make them work.[2]

[1] All items answered in terms of choices among responses indicating degrees of agreement ("strongly agree" to "strongly disagree").

[2] Items modified from original item in Rotter's scale.

Source: Rotter (1966).

of the research was that overt behavioral responses represent the linkage between urban settings and psychological effects. Therefore, in order to define dimensions of overt control-seeking and support-seeking behavior, it was necessary to use conceptualizations of behavior other than Self-Direction and Conformity, which represented predisposing orientations.

Patterns of subordinate and dominant behavior, especially that of the primate species most closely related to man, provided models of overt conforming and self-directed behavior respectively. Experiments with animals are primary sources for hypotheses with regard to deleterious effects of urban environments on humans (Cassel, 1972). Effects vary with social rank characteristics of animals, which in primate species are related to subordinate and dominant behavior. Some non-verbal characteristics of primate subordinate and dominant behavior are common to both primates and humans, and other verbal characteristics differ only in form of communication (i.e., language vs. social signals). Using these concepts of behavior, drawn from ethological studies of primates in their natural environment, and analogies in human behavior, Griffin (1974) developed concepts that, with modifications, served to define characteristics of control-seeking and support-seeking behavior. These are presented in Figure 2-4.

Figure 2-4

Definition and Classification of

Control-Seeking and Support-Seeking Behaviors

Control-Seeking	Support-Seeking
Answers questions	Asks questions
Gives advice	Asks advice
Attempts persuade	Accepts persuade
Attempts direct	Accepts direct
Refuses other	Redirects self
Reinterprets/breaks rules	Asks, upholds rules
Stresses reciprocity	Stresses justice
Manipulates agreements	Sacrifices for agreements
Approaches	Withdraws

The methodology for recording observations of these behaviors was derived from ethology. Specific techniques for using ethological methods in observing, recording, and measuring human behavior have been developed by Sackett and his associates (Sackett, Stephenson and Rosenthal, 1973). These techniques have been found to produce significantly different results from verbal reports of behavior when applied to measurements of behavior related to the formation and maintenance of social hierarchies (Gregory, 1975). Thus, the techniques have been tested on behaviors conceptually related to Conformity and Self-Direction which Kohn and his associates have previously related to differences in occupational and bureaucratic rank. The technique used a behavioral observation scoring system (BOSS), developed by the Child Development and Mental Retardation Center at the University of Washington. BOSS consists of a ten digit keyboard which can be used to code specified behavior. When a key is pressed, an electrical impulse is sent to a magnetic tape on an attached cassette recorder. The recorded impulses are deciphered by special computer programs.

Based on the research plan to use this technology, a behavioral observational code was drafted in which each behavioral emission of each subject would be classified by whether it was a "give" or "receive," "verbal" or "physical" (non-verbal), and "support-seeking," "control-seeking," or "ambiguous" and by person to which the behavior was directed.

Design of Experiment

The behavioral observation code and method of recording were refined in connection with the design and pretest of experiment and procedures. As originally stated in the research proposal, the plan was to use a parlor game to provide conditions designed to elicit control-seeking and support-seeking behaviors. The game of RISK was selected as the model for the game, with modification in rules and procedures to accelerate play and to introduce ambiguities and uncertainties. RISK is a game which involves competition among players for the control of "territories," defined by the nation-states of the world, by the accumulation and movements of "armies," acquired by "attacks" or chance. Strategies are employed to maximize territorial control and armies, often involving alliances and coalitions. It was, therefore, considered to be an appropriate game for eliciting spatially-relevant control-seeking behaviors. Environmental conditions to elicit support-seeking behaviors were more difficult to design. Opportunities to seek support were available for players in seeking direction from others in their moves and countermoves and in accepting subordinate roles in coalitions. Efforts were made to increase opportunities to manifest support-seeking as well as control-seeking behaviors by rewriting the rules so as to require considerable interpretation. (See Appendix B) Players were told to make their own decisions with respect to rules with little assistance from experimenters. This was intended to provide opportunities to seek out direction from others as well as give directions. Because it was believed that support-seeking individuals would tend to find a control-seeking game to be aversive, opportunities for non-game social and spatial behavior were provided by crowding players at a small table and by providing refreshments at a nearby table. It was believed that support-seekers might tend to withdraw from the game interaction and attempt to define non-competitive social interactions. Thus, an additional observation of whether an interaction occurred in "game" or "social" context was entered into the behavioral observational code.

Pretests

Pre-tests were carried out with 5 groups containing 3 to 6 students drawn from an undergraduate subject pool. They reported to a small room containing tables and chairs. In the room they were instructed by an experimenter about the nature of their task. They were then given questionnaires containing demographic and predisposition questions which took about 40 minutes to fill out. Following this session, they were instructed on how to play the game, after which the play began.

In pretesting, a number of different methods of observation were carried out:

1. Through a mirror with observers video-taping and recording behavior with BOSS system.
2. Observers in the room with subjects, and video-tape equipment behind mirror.

3. Observers in the room without BOSS recorders, and video-equipment in the room; and

4. Observers mostly out of the room, and video-equipment in the room with proof to subjects that no observation was occurring behind the mirror.

Post-game questioning of subjects indicated that the fourth condition appeared to provide the least reactivity to the experimental condition.

Following the play of the game for one hour, the subjects filled out a second questionnaire which measured their performance in the game, and their reactions to various facets of the experiment environment such as adequacy of equipment and space. This post-game questionnaire took approximately a half-hour, after which the subjects were debriefed and dismissed.

The game appeared to be effective in eliciting the behaviors of interest. However, while in some groups subjects appeared to become emotionally involved in games, emitting frequent and apparently spontaneous behaviors, the subjects in other groups seemed uninvolved and displayed much less behavior than animated groups. It was decided that a greater amount of spontaneous behavior would be elicited if subjects had some social interaction with one another prior to entering the experimental situation and room. This was provided by a refreshment and informal orientation period prior to the start of the game and after completing the pre-test questionnaire. These procedures improved the amount and apparent spontaneity of behavior.

The most significant finding of the pre-test was, however, that the rate of emission of control-seeking and support-seeking behaviors was too rapid for recorders to evaluate and to code using the real-time BOSS system. While the procedure in the pre-test required observors only to classify behavior by type (i.e., support-seeking, control-seeking, or ambiguous), each behavioral pattern itself was too complex to classify at the rate at which it occurred. After consulting with an experienced user of the BOSS technique, it was decided to abandon its use and to substitute video-tape recording. The major advantages of this latter technique of recording behavior were that the rate of behavior could be artificially slowed down or repeated by playback, giving greater time for discriminatory judgements, and that two observers could record all the behavior of each subject. In the BOSS technique, all subjects were covered, but by rotating observers for set time intervals, and this diminished the amount of behavior which could be observed. Thus, the new procedure appeared to have the advantages of obtaining more observations of behavior and more reliable observations.

The major disadvantage of the video-tape system is that it introduced a very time-consuming coding procedure in the experiment. The project was planned and budgeted on the assumption that coding would occur during observation and data would be entered into the computer system by automated processes. The additional time required for the use of the new procedures was approximately 3 and 1/2 months.

The pre-test also permitted other refinements in experimental procedures. These included procedures for explaining the study so as to obtain sufficient understanding to initiate the game and the time required for sufficient numbers of behavioral observations to occur. The pre-experiment and post-experiment questionnaires were found to be time-consuming but feasible. A few additional questions with regard to motivation and personal environmental experiences were added to the post-experiment questionnaire.

Behavioral Observation Code

The pre-test served as the basis for the design of the behavioral observation code used in the experiment. Identifications of "givers" and "receivers" was eliminated. While the original intent was to use such social interaction data as one criterion for identifying behaviors, further analysis indicated that this would introduce ambiguities in classifying behaviors which could not be solved. It also would not have contributed to the main aim of the experiment, which was to identify predispositions which predicted overt behavioral patterns of support-seeking and control-seeking behavior. It was also decided to note the degree of certainty in classification of behaviors as support-seeking and control-seeking. Separate codes were developed also to identify the field of action in which behavior occurred (in the context of the game interaction or irrelevant social interactions) and actions affecting relations of individuals to their environment. The overall coding system which resulted is shown in Figure 2-5.

Figure 2-5

Behavioral Observation Code

- Type of interaction
  - Verbal give
  - Verbal receive
  - Physical give
  - Physical receive
- Field of action
  - Game
  - Social
- Type of behavior emissions
  - Clear control seeking
  - Control seeking
  - Ambiguous
  - Support seeking
  - Clear support seeking
- Environmental relation
  - No change
  - Arranges environment
  - Adjusts to environment
  - Ambiguous

Subjects

The laboratory experiment was conducted with 192 undergraduate subjects. More females than males were obtained for the subjects as a result of compositions of available subject pools. As explained in the original proposal, it is recognized that use of students as subjects has been criticized, but the predispositions of interest are assumed in this research to be common to all human beings. The distribution of the predisposition responses for student subjects may be expected to differ from the general population, but this experiment was not conducted to determine distributions. Nevertheless, it was considered advisable to identify family background and personal characteristics of the subjects shown in Table 2-1.

Experimental Procedures

Groups of no less than 4 subjects were used in the actual experiment. The subjects were greeted in a small preparation room, in which they were asked to fill out informed consent forms and the initial questionnaires. Following the questionnaire period of approximately 40 minutes, they were given instructions on how to play the game of RISK and were run through a short set-up of the game. This was followed by a short refreshment period, after which the subjects were moved to the game room and randomly assigned to seating around the game table. At a nearby table (within 4 feet) additional refreshments were provided. The experimenters informed the subjects that they should play the game in a natural, informal manner and that they could modify the rules and procedures as they wanted. Because the room being utilized had a mirror in it, they were invited to inspect it to be certain that no one was watching from another room. They were informed prior to their entry into the room that the video-equipment would be recording the game, and that it was only for a record of the game, and this would be kept as confidential.

After the subjects were settled in their places the video-equipment was turned on, and the experimenter left the room. After 45 minutes of play the recording equipment was stopped, and the subjects were asked to fill out post-game questionnaires. This took approximately a half-hour after which the subjects were debriefed and dismissed.

Table 2-1

Subject Characteristics

Age	% of Total Sample
Under 18	1.6
18 - 22	92.2
23 - 26	4.2
over 26	2.1
Sex	**% of Total Sample**
Male	35
Female	65
Estimated Family Income	**% of Total Sample**
less than 5,000 per yr.	2
5,001 to 10,000	10
10,001 to 15,000	26
15,001 to 20,000	25
over 20,000	37
Father's Education	**% of Total Sample**
less than high school	14
high school	38
junior college	14
bachelors degree	23
graduate degree	12

Video-tapes of the game sessions were coded after the game sessions by coders trained to classify behaviors. The procedure was for two observers (graduate students familiar with the conceptual background of the experiment) to code tapes from the pre-test games according to the system in Figure 2-5. Classifications were compared and discussed to reach agreement.

Then additional tapes were coded separately to determine reliability. Pearson correlation coefficients were computed on the support/control ratings of the observors. These ratings were based on a scale of support/control that ranged from 1 to 5 on the basis of degree of control/seeking that a behavior was judged to be. A correlation of .86 was obtained for the scores of judges.

After the pre-test, however, it was decided that the judges would discuss each behavioral episode and come to a joint agreement. This was done to facilitate the goal of development of the measures themselves through the game observation. This helped better define the specific behavior manifestations upon which the coding was based, and which are described elsewhere in this report. Then experimental game tapes were randomly assigned to two of three judges (one male and one female). The judges were instructed to stop and start the tapes as necessary while viewing them in order to get as full coverage as possible of all behavior in the game. Each occurrence of a behavior was coded as to type of interaction, field of action, type of behavior, and subject's relation to immediate environment in carrying out the behavior. Following coding of each behavior, each subject was classified as to overall type of behavior displayed in the game.

Data Analysis

The techniques of factor analysis and multiple linear regression analysis were the major tools of data analysis. Before these analyses were done, the first procedures were to determine the number and frequencies of responses to questionnaire items and the number of behavioral emissions by classification. The percentage of responses to questionnaire items were cross-tabulated by demographic and other categories. Various summary measures of overt behaviors were developed.

This was followed by factor analysis, with orthogonal rotation of the factors. Both 8 and 9 factors were used. Pearson correlation coefficients were calculated to measure the relationships between individual items in the factor analysis and measures of observed behavior, and then between the factors and the observed behaviors. This resulted in the identification of a limited set of factors with significant relationships to measures of observed behaviors. The relationships of both factors and measures of observed behaviors to various background demographic and personal characteristics were then determined. Where significant relationships were identified, demographic and personal characteristics were used as controls in partial correlation analysis and the sample was segmented by personal characteristics. Likert scaling procedures were applied to the factors significantly related to the observed behaviors.

This analysis was followed by the development of a multiple regression model which included analysis of interactions among predisposition scales with one another and with other significant variables.

Findings of Research

Measures of Observed Behaviors

Analysis of the measures of observed behaviors indicated that there was a greater amount of control-seeking emissions than support-seeking emissions. The range for observations of control-seeking was 24 and the median number of emissions was 5. The range for observations of support-seeking behaviors was 8 and the median number of emissions was 1. The number of control-seeking emissions was significantly correlated with the number of "gives," indicating that support-seeking behavior was associated with more passive behavior than control-seeking. It was, however, expected that the experiment would elicit less support-seeking emissions than control-seeking emissions.

Three measures of degree of expression of support-seeking and control-seeking behavior were developed, as shown in Figure 2-6. The first was the amount of each behavior, which also represented rates of behavior because of time of observation for each subject was identical.

Figure 2-6

Measures of Degree of Expression of Support-Seeking and Control-Seeking Behaviors

Rates of Behaviors

Number of control-seeking emissions/45 minutes
Number of support-seeking emissions/45 minutes

Proportions of Behaviors

% control-seeking emissions/total emissions
% support-seeking emissions/total emissions

Summary Judgements of Behavior Type by Level of Control-Seeking and Level of Support-Seeking.

5 Very High
4 High
3 Medium
2 Low
1 Very Low

The second was the percentage of each behavior of total behavioral emissions of each subject. This measure operationally-defined each behavior in terms of its proportional frequency. The third measure was the summary judgement by observers on five point scales of control-seeking and support-seeking. Each subject was rated on their overall expression of control-seeking, with a score of 5 indicating a very high level of control-seeking and a score of 1 indicating a very low level of control-seeking. Each subject was rated similarly on support-seeking. This judgement was made after observers had completed their coding of behaviors and thus was influenced by these data. However, observers were not bound to classify subjects consistently with their amounts and frequencies of behavior. The summary measure thus permitted assigning greater weight to some types of behavioral eipsodes than to others by judgement of the observers.

The three behavioral episodes which observers considered to be the best indicators of support-seeking or control-seeking for each session were recorded. A sample of episodes considered to have indicated control-seeking include such statements as "That's the end of your run," "Shut up, Jim," "We'll let you go this time since it's the beginning of the game," and "I can get him" and such non-verbal actions as picking up the pieces of other players, grabbing and not giving up the copy of the rules, standing up, and smoking against the objections of other players. Some of the incidents considered to indicate support-seeking were statements such as "What do I do - move my pieces here?", "I give up," and "Oh, O.K." and such actions as nodding agreement to a decision without participation, speaking in low tones or whispers, and avoiding direct looks of others. On the basis of observing these types of episodes, the observors developed descriptions of generalized categories of behavior which characterized the behavioral episodes which most influenced their coding of support-seeking and control-seeking behavior (see Figure 2-7).

Those measures identifying each emission as "verbal" or "physical" (non-verbal) showed far less non-verbal than verbal behavior. In retrospect, it appeared that this was related to the stationary nature of the experiment, although in its design it was assumed that the move-

Figure 2-7

Types of Observations Considered by Observers as the Best Indications of Control-Seeking and Support-Seeking

Control-Seeking Observations

Interjects advice or answers questions
Interrupts conversation
Directs actions of others
Refuses to accept direction
Stopping activities of others by interruption
Attempts to persuade others
Attempts to silence others
States desire for flexibility in rules
Questions which presume agreement of others
Demanding rewards
States wish to continue activity
Saber rattling or goading others
Standing when others are seated
Interposing self between others
Patting backs, praising others
Looking crossly at others, criticizing others
Assisting others in physical play
Making decisions for group

Support-Seeking Observations

Asking for help
Asking advice
Asking approval
Asking proper procedures
Giving up earlier than others
Accepting directions
Allowing others to move own objects
Looking to others for approval
Checking with others before acting
Asking permission

ments on game board would provide data of spatial behavior. This was too difficult to observe. However, there was no significant difference in the degree to which support-seeking and control-seeking were associated with non-verbal emissions. Because there were very few observations of non-verbal behaviors, the categories of "verbal" and "physical" were not used in subsequent analysis.

A third set of measures were "gives" and "receives." A give was defined as a communicative act initiated by a subject; a receive was defined as a receipt of a give. As expected, "gives" were significantly related to control-seeking. This measure was retained as an indicator of initiating behavior.

Other measures of observed behavior were related to issues that were secondary to the main problem of identifying overt support-seeking and control-seeking behavior. These measures were not used in the development of the predisposition measures.

Predisposition Measures

Analysis of the distribution and frequencies of responses to each predisposition item revealed that the responses had acceptable distributions. Correlations of responses to individual items with categories of observed behavior revealed that responses to many individual items were significantly related to observed behaviors. This is reported in Table 2-2.

The factor analysis is reported in Table 2-3. The structure of the factors was consistent with the assumption in the proposal that dichotomous predispositions may exist. Two factors emerged which have been interpreted as Dominant and Subordinate factors. These two factors correspond to these concepts of behavior developed from analysis of ethological studies of primate behavior by the principal investigator (Griffin, 1974). Five additional factors emerged which correspond generally with the concepts of Internal Control, External Control, Inner-Direction, Outer-Direction, and Energy. Two factors were identified as Response-Specificity and Rule Conformity. Thus, the questionnaire items related to one another in such a manner as to indicate a structure of attitudes and self-reported behaviors consistent with the

Table 2-2

Partial Correlations of Predisposition Items with Support-Seeking and Control-Seeking Behaviors, Controlling for Game Experience*

	Control-Seeking		Support-Seeking	
Predisposition Measures	Summary Rating	% Behavior of Total	Summary Rating	% Behavior of Total
It is not difficult to stay within the rules without thinking about it.	-.12	-.12		
I never knew anyone who could keep up with me.	.10	.10		
When I am exploring a strange place, I prefer to follow someone else.	-.13	-.17	.17	.17
You don't have to think about keeping the rules--it just happens.	.15			
I would rather work in a group where someone directs the actions of each of us.		-.11	.12	.13
There are right ways to behave and you don't have to keep thinking about them--just follow them.	-.09		.10	
It is usually a good idea to get your behavior back within the rules if you have gone beyond the rules.	-.15	-.14	.11	.11
If I had no control at all over others, it would really bother me.		.09		-.12
It's wrong to do things differently from the way our forefathers did.	.21	.12	-.12	-.16
Whenever someone I know, but don't like, approaches me, I usually step towards them.	.11	.10		
I speak in an authoritative manner.	.28	.20	-.18	-.22
Once an effort has begun the most important thing is staying with it until it has been completed.		.18		-.14

Predisposition Measures	Control-Seeking Summary Rating	Control-Seeking % Behavior of Total	Support-Seeking Summary Rating	Support-Seeking % Behavior of Total
Sometimes it is better to let things slide than to exhaust yourself in trying to do something right.	-.14	-.20	.12	.09
Even if other people are difficult, I can get them to change their behavior.	.18	.23	-.22	-.13
I try to stay out of fights between my very good friends.	-.14		.13	
In a group of people, my opinions usually carry a lot of weight.	.16	.14	-.18	-.13
There is just too much for me to do to ever get caught up.	.16		-.13	-.11
I tend to be easily influenced by people who speak with conviction.		-.13		.09
I can usually get other people to go along with me.	.10	.11	-.12	-.14
In a verbal give and take with people, I usually don't have much to say.	-.11	-.22	.13	.12
I try to be friendly with acquaintances and neighbors.	-.12	-.12		
I find that arguments upset me.	-.24			.20
Only a few things are worth finishing if they require a lot from a person.	.22		-.27	
If I find I can't do something, I simply ignore it.	-.21	-.17	.15	.21
People think of me as a direct and forceful person.	.29	.25	-.24	-.30
When I make plans, I usually can make them work.		.24		-.20
I have always felt that the best way to contribute to an effort is to do things exactly by the book.			.19	.17

Predisposition Measures	Control-Seeking Summary Rating	Control-Seeking % Behavior of Total	Support-Seeking Summary Rating	Support-Seeking % Behavior of Total
In cases of conflict the best thing to do is give in.				.25
It's all right to do anything you want as long as you stay out of trouble.	.23	.20	-.26	-.20
Many times I feel that I have little influence over the things that happen to me.	-.25	-.24	.22	.29
Are you generally one of the first people to try something new or do you wait until you see how it's worked out for other people?			-.22	
I take a positive attitude toward myself.	.29	.30	-.20	-.24
I wish I could have more respect for myself.	-.33	-.23	.25	.31
How often do you feel that you are about to go to pieces?	-.20			
How often do your ideas and opinions differ from those of your friends?		-.19		

*Control for previous experience with playing the game of RISK was used because this was significantly related to control-seeking behavior. The correlations reported were those significant at the .10 level or less.

Table 2-3

Predisposition Factors

Factor: Dominant

Loading	Item
.66	I speak in an authoritative manner.
.64	People think of me as a direct and forceful person.
.59	I can usually get other people to go along with me.
.54	In a group of people, my opinions usually carry a lot of weight.
.45	It is essential to be able to influence others.
-.40	I find that arguments upset me.

Factor: Subordinate

Loading	Item
-.64	If I find I can't do something, I simply ignore it.
-.58	I have always felt the best way to contribute to an effort is to do things exactly by the book.
-.55	I almost always would rather work for a boss who tells me exactly what I am supposed to do.
-.48	In cases of conflict the best thing to do is give in.
-.45	I tend to be easily influenced by people who speak with conviction.
.42	When I make plans I can usually make them work.
-.40	When I am exploring a strange place, I prefer to follow someone else.

Factor: Inner Direction

Loading	Item
-.52	If at first you don't succeed--try, and try again.
-.52	It is usually a good idea to get your behavior back within the rules if you have gone beyond the rules.
-.46	There have been people in my life whose good example I try to follow.
-.43	The most important thing to teach children is absolute obedience to their parents.
-.41	You just have to do the best you can with what is available.

Factor: Response Specificity

Loading	Item
-.51	The way I react to things differs from one situation to another.
-.43	I react to the same situation in different ways depending on my objectives.

Factor: External Control

Loading	Item
-.62	Many times I feel like I have little influence over things that happen to me.
-.52	Bad breaks have sometimes prevented me from becoming an effective leader.
-.43	There is just too much to do to ever get caught up.
-.42	It's all right to do anything you want so long as you stay out of trouble.

Factor: Energy

	Item
.58	I enjoy keeping busy.
.54	My level of activity usually wears out other people.
.53	When I find that I have run out of work, I usually go back for something else to do.
-.45	Sometimes I just like to sit and do nothing.

Factor: Rule Conformity

Loading	Item
-.53	You don't have to think about the rules--it just happens.
-.51	In my day-to-day life I accept limits on my behavior without thinking about it.
-.45	If a person starts to go beyond the rules of behavior, his own feelings are enough to make him return.
-.42	There are general rules which tell me how to behave.

Factor: Internal Control

Loading	Item
-.64	There is really no such thing as "luck."
-.58	Becoming a success is a matter of hard work, luck has little or nothing to do with it.
-.53	It is impossible for me to believe that chance or luck plays an important role in my life.

Factor: Outer Direction

Loading	Item
-.57	I would rather work for a boss who seeks my advice on most matters that affect me.
-.56	It is important to have people believe you.
-.54	It is important to me to work in a place where there is cooperation among the employees.
-.43	Being able to read the feelings of others is very useful in social situations.
-.42	When I do a good job for someone, I expect them to show me appreciation.

Table 2-4

Modal Response Categories for Predisposition Scale Items

Scale Item:	*Modal Response Category	% of Total
Subordinate Scale		
When I am exploring a strange place, I prefer to follow someone. (positive)	2	47
I tend to be easily influenced by people who speak with conviction. (positive)	2	56
If I find I can't do something, I simply ignore it. (positive)	2	70
When I make plans I can usually make them work. (negative)	3	84
I have always felt the best way to contribute to an effort is to do things by the book. (positive)	2	83
In cases of conflict, the best thing to do is give in. (positive)	2	69
Dominant Scale		
I speak in an authoritative manner. (positive)	2	51
Even if people are difficult, I can get them to change their behavior. (positive)	2	53
In a group of people, my opinions usually carry a lot of weight. (positive)	3	62
I can usually get other people to go along with me. (positive)	3	70
I find that arguments upset me. (negative)	3	50
People think of me as a direct and forceful person. (positive)	2	53
Self-Direction-Conformity Items		
The most important thing to teach children is absolute obedience to their parents. (negative)	2	69
It's all right to do anything you want as long as you stay out of trouble. (negative)	2	56
I think that most people can be trusted. (positive)	3	68
Are you generally one of the first people to try something new or do you wait until you see how it's worked out for the other people? (positive)	3	65
I take a positive attitude toward myself. (positive)	3	57
I wish I could have more respect for myself. (negative)	2	52
When things go wrong for you, how often would it be your own fault? (positive)	3	71
How often do you feel that you are about to go to pieces? (negative)	2	59
How often do your ideas and opinions differ from those of your friends? (positive)	2	52

*Response Categories:

1 = Strongly Disagree, Very Often, or One of First (try new)
2 = Disagree, Often, or Usually Early (try new)
3 = Agree, Seldom, or Usually Later (try new)
4 = Strongly Agree, Almost Never, or One of the Last (try new)

assumption of the research that behavioral predispositions may be identified. The particular factors which emerged were among those which were considered likely to be present. Self-Direction and Conformity items did not, however, cluster so as to form factors. The reason for this result was, however, clear. The nine items taken from the Kohn measures of Self-Direction and Conformity were drawn from nine separate factors in Kohn's own factor analysis (cf. Kohn and Schooler, 1969), representing in each case the item which had the highest loading on each factor.

Predisposition Scales

It was apparent that the Dominant, Subordinate and Self-Direction-Conformity items were most strongly related to observed behaviors. Using these data, and conceptual judgement as to the appropriateness of each item for the concept of each factor, some of the items were eliminated in each of the factors. The distribution of responses to the remaining items was determined and considered to be acceptable (see Table 2-4). The resulting sets of items were considered to form factor scales. As a further check on this assumption, Likert scaling procedures were applied to the factor scales and to the Self-Direction-Conformity and Locus of Control measures. (The Internal Control and the External Control factor scales were not identical to the measures used to measure Locus of Control as defined by Rotter. While some of the Rotter items were included in these factor scales, other items were not.) The results of this analysis indicate that the Dominant and Subordinate factor scales had acceptable indices of reliability (.712 and .601 respectively). The items selected to measure Internal Control factors had a relatively strong coefficient of reliability (.657). Likewise, the External Control items had an alpha coefficient of .556. Self-Direction and Conformity measures did not scale by Likert criteria. This was not surprising in that the items were drawn from distinct factors in the research defining measures of these predispositions.

The results of Likert scaling for the Dominant and Subordinate Scales are shown in Table 2-5.

Table 2-5

Predisposition Likert Scaling

Subordinate Scale: Alpha Coefficient = .60 (n = 251)

Item:		Adj. Item - Total Correlation
26	When I am exploring a strange place, I prefer to follow someone. (positive)	.43
65	I tend to be easily influenced by people who speak with conviction. (positive)	.48
82	If I find I can't do something, I simply ignore it. (positive)	.53
84	When I make plans I can usually make them work. (negative)	.47
86	I have always felt the best way to contribute to an effort is to do things by the book. (positive)	.36
91	In cases of conflict, the best thing to do is give in. (positive)	.46

Ave. Adj. Item-Total r = .455

Dominant Scale: Alpha Coefficient = .71 (n = 251)

Item:		Adj. Item - Total Correlation
53	I speak in an authoritative manner (positive)	.63
59	Even if people are difficult, I can get them to change their behavior. (positive)	.59
63	In a group of people, my opinions usually carry a lot of weight. (positive)	.59
67	I can usually get other people to go along with me. (positive)	.56
77	I find that arguments upset me. (negative)	.34
83	People think of me as a direct and forceful person. (positive)	.61

Ave. Adj. Item-Total r = .550

Predisposition Scales and Observed Behaviors

The relationships between the predisposition scales and the measures of observed behavior were then examined. Zero order Pearson correlation coefficients were calculated. There were significant relationships, but the relationships were strengthened in some cases when controlled for previous experience with playing the game of RISK (the model for the experimental game). About 30% of the sample had played the game previously and playing the game was significantly related to control-seeking behavior. As control-seeking was measured in this study by types of behavior likely to be affected by previous experience with the game (e.g., giving directions, interpreting rules for others, etc.), the true relationships between predispositions and observed behaviors were considered to be best measured by eliminating variance related to previous experience with the game of RISK. These partial correlation coefficients are reported in Table 2-6. Relationships of predisposition measures to amounts of behavior were slightly weaker than to other measures of degree of observed behavior, although similar in pattern. This measure was therefore dropped. The same partial correlation coefficients for the relationship of predisposition measures to measures of initiating behaviors is reported in Table 2-7.

Regression Analysis

Multiple regression analysis was used to examine the degree to which variance in observed behavior could be explained by predisposition measures and the interactions between measures. Dependent variables for the regression analysis were measures of percent of total behavior classified as control-seeking and support-seeking behavior, and summary judgements of the behavior type of each subject. The independent variables chosen for the regression model were the predisposition measures having the most significant relationships to these dependent variables, as shown in Table 2-6. The interaction terms to be entered into the regression equation were decided upon by visual inspection of cross-tabulated independent and dependent variables. Where sizable interaction effects appeared they were entered into the regression analysis as dummy variables (e.g., high Dominant, high Self-Direction equals 1, otherwise 0).

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Table 2-6

Partial Correlation Coefficients of Selected Scales with Measures of Observed Support-Seeking and Control-Seeking Behavior[1]

Scale or Indices	Summary Ratings		% Total Emissions	
	Control	Support	Control	Support
Subordinate	-.16**	.13*	-.23***	.24***
Dominant	.34***	-.29***	.26***	-.28***
Self-Direction and Conformity	.29***	-.26***	.20**	-.26***
Locus of Control	.03	-.01	.08	-.02
Inner-Direction	.08	-.07	.00	-.10
Outer-Direction	.03	-.07	.01	-.07
Energy	-.05	.01	-.01	.01

[1] Controlled for previous experience with game of RISK.

* p ≤ .05
** p ≤ .01
*** p ≤ .001

Table 2-7

Partial Correlation Coefficients of Selected Scales with Measures of Amounts of Initiating Behavior Emissions[1]

Scale or Set of Measures	All Emissions	Verbal Gives	Non-Verbal Gives	% Gives
Subordinate	-.09	-.06	-.09	.00
Dominant	.20**	.23***	.01	-.01
Self-Direction	.21**	.15**	.19**	-.03
Locus of Control	-.03	-.06	.06	-.04
Inner-Direction	.10	.15**	-.05	.13**
Outer-Direction	.10	.11	.01	.16**
Energy	.10	.15**	.01	.04

[1] Controlled for previous experience with game of RISK.

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Three predisposition scales were selected for this part of the analysis: Dominant, Subordinate and Self-Direction/Conformity. Inspection of 3 variable cross-tabulations of these variables with the dependent variables identified no interaction effects. However, since theory suggests the likelihood of an Energy-Dominant interaction in producing controlling behavior, 3 way cross-tabulations for this variable also were inspected. The result indicated a possible strong interaction effect. (See Figure 2-8)

A second set of independent variables was identified by inspection of the matrix of simple correlations for variables that were significantly related to the first set of predispositions and observed behaviors. Among this set, sex, perceived control, and support (i.e., subjects self-reports of their degree of control or support in the game situation) were of theoretical interest. Sex and perceived control showed possible strong interaction effects with the Dominant scale, but perceived support did not show this effect for subordinance. (See Figures 2-9 through 2-11)

These results were then used to develop an hierarchically structured regression model with order of priority of groups of variables assigned by considerations of theory. In this way variables of lower theoretical priority could not "wash out" or substitute for variables of greater theoretical significance. Stepwise forward selection of variables was used within each hierarchical grouping to select variables. Measures of predispositions were entered first, followed by the dummy variable representing the Dominant/Energy interaction. The order of entry for these variables was determined by the percent of variance which each explained until no significant improvement resulted. The second group of variables entered were those that were theoretically indicated by the conceptual scheme of this research. These were perceived control and perceived support while playing the experimental game, and previous game experience. This game experience variable was conceptualized as increasing opportunity to exhibit control-seeking behavior (i.e., interpretations of rules, giving directions). The final set of variables, entered last in hierarchical precedence, were demographic variables that were related to observed behaviors.

The model which explained the greatest variance in observed behavior is shown in Table 2-8. The analysis indicated that the Dominant

Figure 2-8

Dominant - Energy Interaction

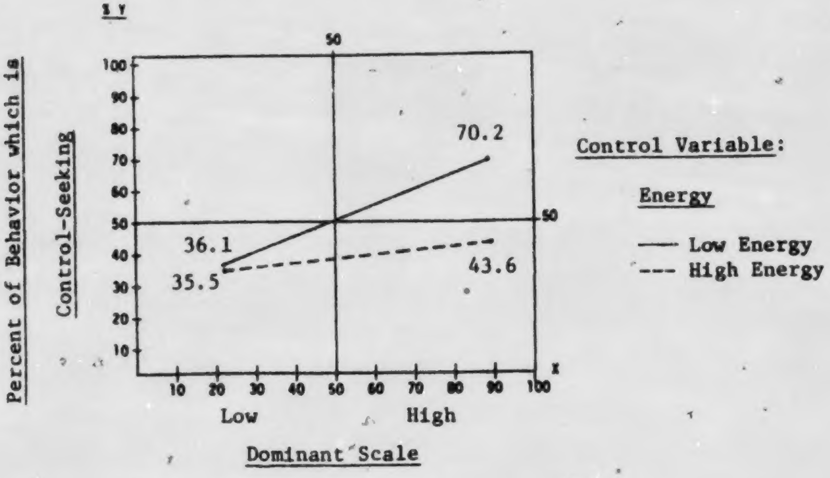

Figure 2-9

Dominant - Sex Interaction

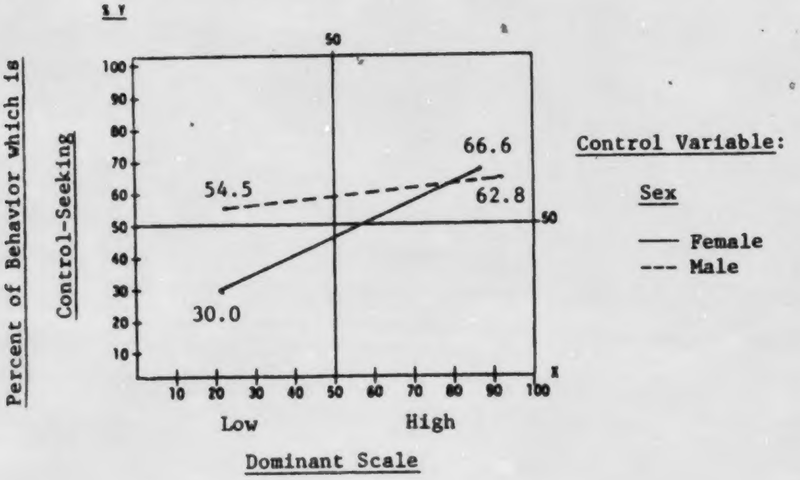

Figure 2-10

Dominant - Perceived Control Interaction

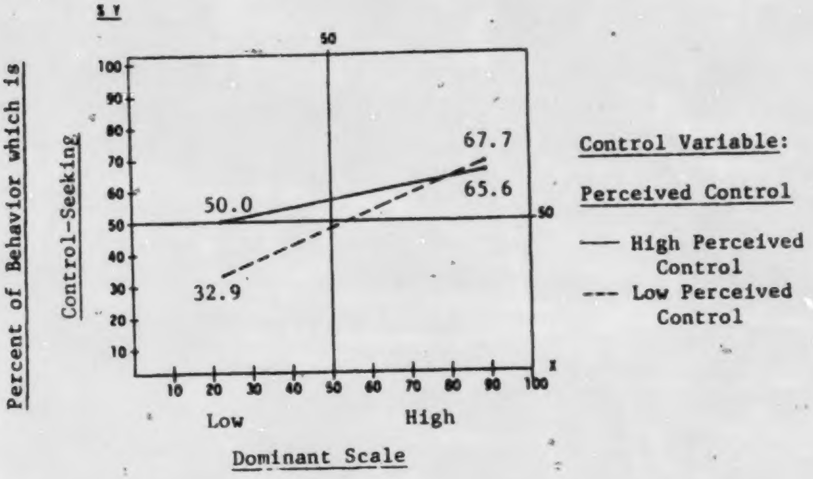

Figure 2-11

Dominant - Perceived Support Interaction

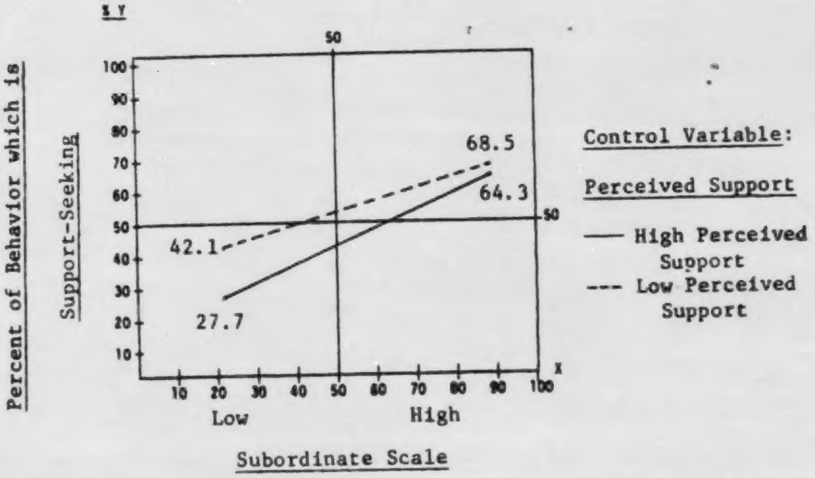

Table 2-8

Regression of Variables Predicting Control Summary Judgement*

Independent Variables	Multiple R	R^2	R^2 Change	Beta
1. Dominant Scale	.307	.094	.094	.272
2. Self-Direction Conformity	.380	.144	.050	.201
3. Dominance Energy Interaction	.429	.184	.039	.136
4. Dominance Perceived Control Interaction	.458	.210	.025	-.167
5. Prior Game Experience	.550	.303	.093	.312

*All variables significant at .05 level
(n = 190)

scale measure and Self-Direction-Conformity measures of predispositions accounted for all the variance in summary judgement of control-seeking that was explained by predispositions alone. The Dominant/Energy interaction, the Dominant perceived game control interaction, and prior game experience also accounted for significant percentages of variance. Once these independent variables were entered, no significant increment was accounted for by sex. Similar results were found for the regression analysis using control-seeking behavior as a percentage of total emissions as the dependent variable. This accounted for less of the variance, however, and the Dominant/Low Perceived Control interaction term was eliminated.

In regression of analysis of support-seeking behavior, the Subordinate Scale did not appear. In the best final model (see Table 2-9) the Dominant Scale accounted for more of the variance in observed behavior than did the Subordinate Scale. Thus, once the Dominant scale was entered in the model, the Subordinate scale was eliminated.

Results for the second model in which observed behavior was measured as a percent of total emissions were similar, but accounted for less variance. The Self-Direction-Conformity measure entered first followed by the Dominant Scale.

In all of the models the demographic variables (entered last), did not account for any significant variance once predispositions, perceptions of control and support and previous experience variables had been entered. These variables included sex, estimated family income, and occupational status of father.

Summary and Conclusions

The objectives of this research were to refine concepts of predispositions and to develop measuring instruments. These objectives were achieved, but the findings of research also achieved additional objectives.

The first accomplishment was to define and to measure overt patterns of support-seeking and control-seeking behavior. To our knowledge, such patterns of behavior have never before been systematically

Table 2-9

Regression of Variables Predicting Support Summary Judgement*

Independent Variables	Multiple R	R^2	R^2 Change	Beta
1. Dominant Scale	.258	.066	.066	-.170
2. Self-Direction Conformity Scale	.329	.108	.041	-.194
3. Dominance Energy Interaction	.383	.147	.038	-.149
4. Prior Game Experience	.489	.239	.092	-.311

*All variables significant at .05 level
(n = 190)

defined, observed, and measured. The existence of these patterns of behavior was inferred from social epidemiological and personality studies. In observing coherent patterns of behavior, and showing that these patterns of behavior were significantly related to measures of predispositions, the research has defined and established existence of behaviors which, in most research, is inferred from attitudes and self-reported experiences. Thus, the research not only has established the existence of patterns of behavior, but the relationships of these behaviors to measures such as Self-Direction-Conformity suggest that the finding may contribute to understanding social class-related behaviors.

The second accomplishment was to identify measures of predispositions that were significantly related to these behavioral patterns. Factor analysis indicated that conceptually relevant and coherent groupings of predisposition items do exist. Three of these predisposition measures were highly significantly related to measures of observed behaviors. To appreciate these results fully it should be kept in mind that the relationships reported have been established between measures of attributes taken by totally independent methodologies. This means, of course, that sources of measurement error and construct invalidity for the self-report and observed attributes are independent and uncorrelated. Thus, we should expect the measures of association between the self-report and observed attributes to be quite conservative. Contrast this situation with, for example, the more common practice of validation of paper-and-pencil tests against other similar measures of achievement (e.g., SAT scores with grade-point average).

In consequence, the findings in Table 2-6 strike us as impressive. These findings also are consistent with the working hypothesis that Self-Direction is related to seeking control and Conformity is related to seeking support. It was also expected that Self-Direction and Conformity may be a manifestation of underlying predispositions. The finding that Dominant and Subordinate scales were even more strongly related to support-seeking and control-seeking behaviors than Self-Direction and Conformity, and both are related to behavior conceived to be Dominant and Subordinate, is consistent with this expectation. This suggests that Self-Direction-Conformity may represent a situation-specific orientation in which Dominant and Subordinate behavior is expressed.

The regression analysis demonstrated that the predisposition measures, together with measures of feedback of perceived control, and obvious personal experience factors, predict a substantial proportion of the variance in observed behavior. The consistent differences in results for models using summary judgement measures of dependent variables and those using percent behavior of total emissions measures seem to be related to the effect of gestalt judgements and subtle weighing of behaviors. From review of procedures in the light of these findings, it appears that inactive and active manifestations of control-seeking behaviors were observed. In the first case, observers perceived that some individuals exhibited personal control by manifesting confidence about their having control; in the second case, other individuals exhibited personal control by striving to get control. In the summary judgement rating of individuals, the former type of confident, inactive behavior was intuitively weighed positively in classifying individuals as control-seekers; but where control-seeking behavior was measured as a percent of total emissions, these same individuals would rate lower in control-seeking than that of active strivers for control. With regard to support-seeking scoring, subjects who were extremely passive, and did little one way or another, also tended to be classified as support-seekers in summary judgement ratings, and yet exhibited infrequent support-seeking behavior.

The most impressive feature of the regression analysis is that such a high degree of the variance in observed behavior could be explained by variables within the conceptual scheme. It was also significant that none of the demographic variables measuring social and personal characteristics explained any significant portion of the variance in observed behavior, once the variables in the conceptual model were entered. This was especially striking for sex. Because the subjects were college students of the same general age and race, the regression analysis did not appropriately test whether the predispositions might account for variation in observed behavior by social class, age, and race.

The regression analysis established that the Dominant Scale was the best single measure of predispositions, but that Self-Direction-Conformity measures added to the proportion of variance which could be accounted for. The research should not be interpreted to indicate that measures of Subordinate predispositions are not also potential predictors of support-seeking behaviors. The results indicate that support-seeking behavior is related to both Subordinate and Conformity measures, and Conformity has been found by Kohn (1977) to be related to lower social class characteristics. The limitation of the sample to college students restricted the range in variation in social class characteristics.

The findings of this research were not consistent with the assumption that behavioral predispositions are dichotomous. Both control-seeking and support-seeking behaviors were observed in most subjects. The measures of predispositions were, however, in the form of forced-choice "agree-disagree" items. This form of measurement may have forced individuals with nearly balanced predispositions to choose randomly between agree and disagree responses, reducing the strength of relationhsip between predisposition measures and observed behaviors.

The research reported in this chapter identified measures of self-reported behaviors and attitudes which were highly significantly related to observed behaviors. This established the existence of measures related to overt behaviors which define the general nature of predispositions. The results provide a basis for refinement of original concepts of behavioral predispositions. However, as the field research reported in subsequent chapters provides additional understanding of behavioral responses to environments, further refinement of concepts was undertaken later in the research in connection with integration of research findings and is reported in Chapter VI.

III. EXPLORATORY RESEARCH

The second major objective of this research project was to clarify and to specify objective attributes of urban environments. This research was limited to defining these attributes in measurable terms in order to formulate operationally-defined hypotheses. The relationships of environmental attributes to behavioral predispositions and psychological states would be investigated in subsequent research projects.

In the theoretical framework of this research, urban environments were conceptualized as settings for social functions, such as work and home activities. The attributes of these urban settings relevant to well-being were defined as those characteristics which facilitate or impede behavior directed to attaining social support or personal control. Therefore, the research plan was to identify environmental dimensions which are related to social isolation and social press and to behavioral predispositions.

This approach was further elaborated in the course of the research. The first four steps in the procedure were as follows: (1) refinement of the concept of urban settings in order to define criteria for research; (2) preliminary specifications of dimensions of urban environment to be investigated on the basis of review of previous research; (3) exploratory studies of perceptions of these environmental dimensions and their relationships to psychological states and well-being; and (4) conceptualization of environmental dimensions in terms of the findings of exploratory research. In subsequent methodological research, working hypotheses with regard to relationships of these environmental dimensions to social support and personal control would be cross-validated and objectively-defined and measurable attributes of urban settings specified.

Clarification of Concepts of Urban Environments

Basic assumptions of the study were that urban environments should be defined in terms of measurable social, physical and temporal attri-

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butes which are systematically interrelated, not arbitrarily bounded, and objectively-defined. These assumptions stem from behavioral setting theory as defined by ecological psychologists (cf. Barker, 1968). The study also assumed that the most significant level of the environment is its organization to perform social functions. Environmental attributes, therefore, should be defined in terms of units of environment in which these functions occurred.

Initial Definition of Terms

Thus, the first step in this phase of the research was to develop working definitions of the components of urban environments. In urban research, the neighborhood has often been used as an arbitrary unit defining the spatial distribution of home-related activities. This research does not assume that the neighborhood is the best unit for describing the functional environment. Similarly, in workplace research, the organization has often been assumed to describe the functional environment, but this is not assumed to be the case in this research. This research seeks to determine empirically the dimensions of functional environments.

Functional Environment. The term "functional environment" was adopted to designate the level of organization of urban environments for functional activities. The boundaries of functional environments are not arbitrarily defined in this study. The crucial environmental determinants of both behavior and well-being are assumed to be the degrees to which the environment provides support and control. Thus, the definition of functional environments depends on (1) identifying the dimensions of environment related to support and control and (2) determining the points on these dimensions at which significant variation occurs in the degree to which support and control are obtained. For these reasons, the criteria for defining functional environments could not be determined prior to determining the relationships of measures of these dimensions to behavior and well-being. These relational findings will determine what aspects of the urban environment are salient to well-being and, at the same time, how these characteristics are distributed in space.

Relation of Individuals to Functional Environments. Individuals relate to functional environments through the behavior (i.e., overt, verbal and non-verbal) by which they carry out functional roles. Functional roles define the patterns of activities which individuals are expected to carry out. These functional role expectations are determined by social units (e.g., households, workgroups, etc.), thus activity patterns are properties of social units. Functional roles determine opportunities to participate in activities. Variation in roles is relevant in this research to define variation in points of environmental contact or interaction.

Probably this variation itself is only important where it makes a major difference in the interaction of each class of individuals with the environment. For example, while there may be considerable variation in styles of child-rearing, it is probable that dependent children impose certain essential activities on a household which are not required of households without dependent children. The differences between such a household and households composed of young adults or elderly adults are considerable in terms of interactions with the environment. This kind of variation must be considered because it may result in a high degree of variation in interaction with environments.

Relation of Behavior to Environment. Each functional environment for each individual is defined by settings in which he carries out the functional activities of social units of which he is a member. Each person interacts with functional environments as a consequence of membership in a social unit performing types of functions (e.g., home, work, etc.). The place in which the social unit is located is designated its focal setting. Every social unit uses a focal setting for its functional activities; and in any use at a particular time, the social unit is part of the environment of the setting. The focal setting is the proximal environment of the individual in his status as a member of the social unit of the behavior setting. Members of every social unit also use other places for activities in their functional roles. These are designated satellite settings. In activities in performance of functional roles, the relationship of the individual to satellite settings differs from his relationship to his focal setting. Satellite settings may operate to perform their own functions (e.g., selling groceries, conducting religious services) and not the functions of the functional social unit of the individual (e.g., work, home functions). However, satellite settings are analyzed in terms of their facilitation of the function under study, which differs from the approach used in behavior setting research. It is thus not appropriate to regard a functional environment as composed of a series of behavior settings for the purposes of this research; instead, satellite settings represent distal environments of the functional social unit. Therefore, focal settings, and their associated satellite settings and their connections, define the unit of each functional environment of an individual. The relationships are shown in Figure 3-1.

Approach to Defining and Measuring Attributes

The more refined conceptualization of urban environments presented in the foregoing pages implies an approach to identifying attributes of urban environments relevant to this research. The nature of the relationships of functional environments to individual behavior implies that exploratory research should aim at measuring dimensions of the proximate environment and of a few selected distal environments of individuals. Further, the research should be confined to home and work environments of these individuals. These environments are assumed to have the strongest relationships to variation in levels of support and control. Out of this research it is expected that a reduced set of environmental dimensions will begin to emerge. It is also expected that this research will begin to clarify the boundary-defining dimensions of functional environments and the organization of settings within those environments.

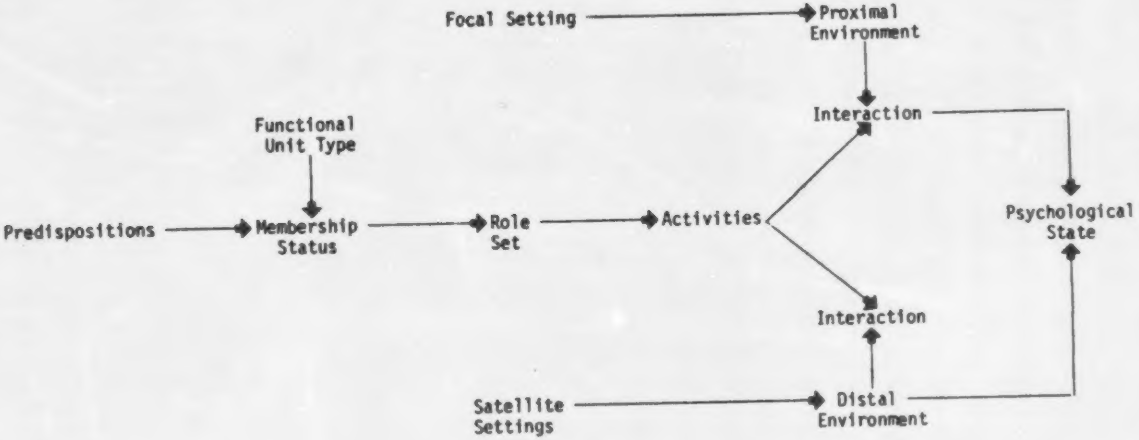
Preliminary Specification of Environmental Dimensions

Criteria

The next procedure was to investigate published research, as well as reports of current studies, to determine environmental characteristics relevant to the problem. The search was confined to studies of the relationships of work and home environments to health and well-

Figure 3-1

Relationships Among Variables



being. The criteria for defining relevant environmental characteristics are based on the goals of the study. The first criterion is that characteristics must be defined in terms of dimensions relevant to control and to support. The second criterion is that the dimensions must be _potentially_ subject to manipulation by planning and management processes. It is assumed that planning and management practices may change in the future if findings warrant such change. The third criterion is that dimensions must be objectively-defined and quantitatively-measurable. This is to facilitate the development of methods in planning, design and management of the environment. The fourth criterion is that environmental characteristics must be defined generally so as to be relevant to all types of functions (e.g., home, work).

The search found that little research has been conducted in which environmental factors were defined in terms which were consistent with the criteria. This was expected from the earlier literature search which formed the basis of the assumptions of the study in the original proposal. Previous research, however, did suggest an important distinction. From analysis of recent research, and reassessment of older studies, it became clear that social support and personal control pertain primarily to facilitating adaptation to the demands of environments. It was therefore important to define the dimensions which demand adaptation and those which facilitate adaptation.

Demand Dimensions

Most of the previous epidemiological research relevant to functional environments have investigated attributes which demand adaptive efforts to cope with environments. These may be conceived to fall into four general categories: (1) population characteristics; (2) structural characteristics; (3) functional characteristics; and (4) physical characteristics.

1. _Population characteristics_ which have been conceived to demand adaptation are: (a) large size of cities, work organizations, and families (Wirth, 1938; Morris, 1968; Moos, 1976; Brown, et al., 1975; Dubos, 1965); (b) rapid change in the size of cities, work organizations, and personal relationships (Cassel, 1970; Howard, et al., 1977;

Holmes and Rahe, 1967; Paykel, et al., 1975); (c) high population density (Galle, Gove and McPherson, 1972; Stokols, 1972; Booth, 1975; Mitchell, 1971; Cohen, et al., 1977) and extremes in population density (Altman, 1975; Moos, 1976); and (d) social heterogeneity in population composition (Wirth, 1938; Cox, 1966; Moos, 1976: 308-312; Harburg, et al., 1973).

2. Structural characteristics demanding adaptation have been (a) social disintegration (Durkheim, 1951; Leighton, 1959, 1968, 1964), which includes (b) the more specific attributes of lack of pattern or routine (Leighton, 1968; Holmes and Holmes, 1970) and perceived uncertainty (Kritz and Moos, 1974), (c) social change (Holmes and Rahe, 1967; Paykel, et al., 1975; Cassel, 1970), and (d) structural dependency of communities and organizations (Kotler, 1970; Vidich and Bensman, 1960; Warren, 1963) including dependency resulting from social class status (Srole, et al., 1962; Langner and Michael, 1963; Liem and Liem, 1978).

3. The functional characteristic of environment which has been conceived to demand adaptation is essential workload. This can be broken down into the components of (a) high quantitative workload at work (Buell and Breslow, 1960; Insel and Moos, 1974) and of the combined effects of work and home demands (Katz and Weiner, 1975; Pearlin and Johnson, 1977; Hinkle and Plummer, 1962), (b) the number of persons for which persons are responsible at work (Kritz and Moos, 1974) or at home (Pearlin and Johnson, 1977), (c) the amount of time perceived to be available to accomplish work (Friedman, 1968; Glass, et al., 1974), and possibly (d) the number of functionally-specialized segmental relations to which individuals must adapt in urban settings (Milgram, 1970). Contrary to the trend of these findings, ecological psychologists have emphasized the negative psychological effects of too little to do and too many people to carry out functions in overmanned settings (Willems, 1967; Barker, 1968; Bechtel, 1977), implying that at higher levels of demand from workloads have positive effects.

4. Physical characteristics which are conceived to place adaptive demands on individuals are a variety of auditory, visual, thermal and other physical stimuli (Selye, 1971; Moos, 1976). The emphasis in

research on sensory stimulation has been upon the concept that both very high and very low levels of environmental stimulation have unfavorable adaptive effects.

As will become evident in the following pages, further analysis suggests that structural characteristics may be more appropriately conceived as a facilitative factor. With this exception, none of the foregoing environmental characteristics seem to be relevant to the goals of the study.

Facilitative Dimensions

Social Support. Relatively few attributes of environments have been identified as facilitating social support in previous research. These environmental characteristics have been defined in terms of (a) social network, (b) social homogeneity, and (c) attributes of social interaction. Cobb (1976) has viewed social supports as a buffer against stress. He defines three concepts of social supports, based on the effect of information on the beliefs of subjects that: (a) they are cared for and loved (emotional support); (b) they are esteemed and valued (esteem support); and (c) they belong to a network of communication and obligation (network support). Cassel (1974, 1977) defines social supports in terms of presence of familiar persons and importance and salience of the relationship. Henderson (1977) echoes similar themes to those of Cassel and Cobb in suggesting that support may be a function of variables such as perceived availability of the persons, total time spent in interaction, the degree of affectional reciprocity, and level of attention given. Based on a review of previous research, Kritz and Moos (1974) identify certain dimensions of environment related to support. These are: (a) support, defined as presence or absence of father, mother or spouse; presence of absence of leadership (influence); attitudes or policies of helping versus punishment; (b) cohesion, defined by how close people feel to one another; people working together; not having to do things with people not known well; and (c) involvement, defined as strong affective relationships. In summary, environmental attributes which are conceived to facilitate social support can be broken down into separate components.

1. One component is social networks. Walker, Macbride and Vachon (1977) define social support networks as a set of personal contacts through which the individual maintains his social identify and receives emotional support, material aid and service, information and new social contacts. Social support networks characteristics are: (a) size -- number of social contacts; (b) strength -- amount of time, emotional intensity, intimacy, reciprocal services; (c) density -- extent that members know and are connected to one another independently of the individual; (d) homogeneity of membership -- role, status and age similarities. A number of hypotheses are advanced as to the effects of different aspects of social support networks.

2. A second component is social homogeneity. This may be defined in terms of the degree to which individuals are alike in their social characteristics. The hypothesis is that the greater the degree of social homogeneity, the greater the degree of social support (cf. concept of cohesion, Kritz and Moos, 1974; ethnic isolation of marginal men, Park, 1928; Holmes, 1956; cultural and social class homogeneity of Roseto, Stout, 1974; presence or absence of strangers, Cassel, 1977; design of mixed housing, Boeschenstein, 1977).

3. The next component consists of various specific dimensions of social interaction:

Social contact: the frequency, length, and directness of social contact (cf. presence or absence of father, mother or spouse, Kirtz and Moos, 1974; mere presence or absence of others, Chan, 1977; Wrightsman, 1975; Cassel, 1977; number of social contacts, Schooler and Bellos, 1977; Fried, 1966, spatial context of social contact);

Social involvement: degree of personal affection in social contacts (cf. Cobb, 1976; cohesion and involvement, Kirtz and Moos, 1974; confident relationships, Brown, 1975; Lowenthal and Haven, 1968; affectional reciprocity, Henderson, 1977; strength, Walker, et al., 1977);

Social reciprocity: degree of reciprocity of material goods and services in social contacts (cf. Walker, et al., 1977; persons who help, Chan, 1977; pecuniary support and mutual aid in Roseto, Bruhn, et al., 1966; Stout, et al., 1974; Fried and Gleicher, 1962);

Social esteem: degree of status equality in social contact (cf. Cobb, 1976; Fried, 1972; one class character of Roseto, Bruhn, et al., 1966; Stout, 1974; status inconsistency, Park, 1928; Hughes, 1949; Jackson, 1962; Abramson, 1966; Cassel, 1971; work status, Brenner, 1973).

Personal Control. The literature of personal control has defined the phenomenon in terms of motivation. The concept of personal control is implicit in some studies, as Inner and Outer Direction and Self-Direction and Conformity (Riesman, et al., 1953; Kohn, 1977), but specific environmental attributes yielding personal control are usually not systematically identified. Studies of intrinsic motivation also are concerned with personal control, but define attributes of environment related to personal control in terms of cognition (Deci, 1976). There is a considerable literature on lack of control over contingencies of reinforcement and their effects on behavior and health (Seligman, 1976; Staub, et al., 1971; Corah and Boffa, 1970; Singer and Glass, 1972, 1973; Sherrod, 1974; Gatchel and Proctor, 1976). While the findings of this research suggest principles to use in searching for environmental attributes related to lack of personal control, there has been no systematic investigation of specific attributes.

Social Structure. The implications of social structure for social support and personal control are not obvious. This is partly because social structure has been defined in ways which obscure its environmental attributes. Drawing upon Moore (1967) in particular, but adapting some of his terms for this research, it is possible to define social structure in terms of environmental attributes:

Social structure: the degree to which social interaction occurs (i.e., activities involving social contact) in repeated uniform patterns and orderly sequence;

Social integration: the degree to which the pattern and sequence of social interaction is regulated by shared rules;

Social differentiation: the degree to which patterned and sequential social interaction are organized by division of functional responsibilities;

Social stratification: the degree to which patterned and sequential social interaction differs by social rank;

Social stability: the degree of current change in the pattern and sequence of activities.

In this perspective on social structure, social interaction is distinguished from social structure by the degree to which social contacts occur in uniform patterns and orderly sequence. Environmental interactions may thus be analyzed in terms of the degrees of social structure, integration, differentiation, stratification, and stability. In this perspective, the findings of previous epidemiological research may be related to facilitating social support and personal control.

Social epidemiological research suggests that high degrees of social structure, integration, stratification, and social stability would tend to facilitate obtaining social support from the environment. This is not, however, obvious from previous research, but requires considerable interpretation of reported data and findings (cf. Griffin, 1974, 1977). According to these interpretations, social change from urbanization and industrialization tends to have deleterious effects on people with traditional backgrounds because of its effects on social integration, as implied by studies of cultural conflict and incongruity (Cassel, Patrick and Jenkins, 1960; Cassel and Tyroler, 1961), social stratification, as implied by research on upward social mobility (Kaplin, Cassel and Tyroler, 1971), and social stability, as implied by studies of adaptations to new urban situations (Abramson, 1966; Clout, 1962; Gampel, et al., 1962; Fried, 1966, 1967, 1974; Martin, et al., 1957; Lawton and Cohen, 1974). Thus, urban environments may provide social structures (repeated uniform patterns and orderly sequences of social interactions), social integration (shared rules), social stratification (differentiation of social interaction among individuals of varying social rank), and social stability (invariability of patterns and sequence of social interaction).

On the basis of similar analysis, it appears that high degrees of social differentiation, and low degrees of stratification and stability, facilitate obtaining personal control over the environment. Social differentiation refers to the degree to which the functional responsibilities are divided within the social unit. Thus, social differentiation, defined as a high degree of clarity and specificity in division of functional responsibilities, is seen as facilitating personal control. It avoids role conflict and ambiguity (Kahn, et al., 1964; Kahn, 1973), the Type A behavior of struggling to meet ill-defined objectives (Friedman, 1969) conflict and competition (Howard, et al., 1977; Jenkins, 1966), and enhances organizational clarity and predictability (Kritz and Moos, 1974). Social stratification may also be seen as enhancing personal control to the degree that social rank increases the power available to the individual. Political power is seen as a personal control factor related to good health (cf. Cassel, 1977). Assuming that concentration of power from social stratification and differentiation of functions leads to differentiation of ends of activities, these two conditions are likely to lead to social change as a consequence of control-seeking by persons of high social rank and differentiated social functions.

Relationships of Demand and Facilitative Dimensions

Certain relationships between demand and facilitative dimensions of urban environments are logically implied by the conceptual scheme for this research. Facilitative attributes may be conceived to be those which enable individuals to use environments to adapt to pressures imposed by demand dimensions of the environment. Demand dimensions are conceived to be environmental attributes which place non-specific pressure for adaptations on individuals. The degree of non-specific pressure on individuals is conceived to be a function of: (1) the level of demand imposed by each demand dimension, (2) the stability of the demand, and (3) time of exposure to the demand. The relationship of adaptive pressures to values on the demand curve may vary among dimensions, as well as its shape itself. In some cases high values, and in other cases both high and low values, may impose the greatest adaptive pressure on individuals. In all cases, it is assumed that adaptive pressures in one setting, in one specific dimension, may elicit control-seeking and support-seeking in other settings. Certain working hypotheses can be advanced as to how demand dimensions interact with facilitative ones:

(1) The greater the adaptive demand, the more individuals seek control and/or support from their environment.

(2) The more individuals obtain control and/or support from their environment, the less the perceived demand for adaptation.

(3) The greater the adaptive demands, the more that the degree of adaptation depends on the degree to which the environment facilitates support and/or control.

The foregoing working hypotheses makes more explicit the function of control and support in adaptation to environmental demands. In the absence of control of, or support from, the environment, it is assumed that there is a direct relationship between degree of environmental demand and adaptation. Seeking-control and seeking-support are, however, conceived as adaptive overt behavioral responses to environmental demands. If these goals are obtained, then the relationship to the environment of control or support reduces the degree to which behavioral adaptation is perceived to be demanded. More specifically, perceived control reduces the extent to which the individual experiences pressure to adapt and perceived support reduces the extent that individuals feel exposed to these same demands. In contrast, social press is a condition in which the individual perceives that he has no control and must adapt; social isolation is a condition in which an individual perceives he is alone and helpless and must adapt. It is thus the experience of social press and social isolation in the context of environmental demands which stimulates adaptative behavior.

Description of Empirical Research

Research Design

The "known groups" technique was employed to explore perceived environmental factors related to variation in degree of support and degree of control. The approach was to select individuals known to be experiencing high or low degrees of social support and high or low degrees of personal control. These individuals were interviewed with regard to their perceptions of environmental attributes which presented difficulties for them in their home and work activities or which tended to make their home and work activities easier. This approach assumed that environmental attributes which were perceived to make activities easier and which were associated with high social support or high personal control represented facilitative dimensions. Environmental attributes associated with difficulties in carrying out activities, and associated with low social support (social isolation) and low personal control (social press), were assumed to represent either demand dimensions or impeding rather than facilitative dimensions. To assist in the interpretation of these environmental attributes, interviewers would need to explore in depth the experiences and interpretations of individuals and to assess behavioral predispositions. The design for exploratory research also required access to a large number of subjects with varying personal characteristics and varying work and home environments in order to insure sufficient range in both psychological states and environmental perceptions.

Data Collection

Subjects were obtained by screening visitors to the Hershey Medical Center, which is located on the outskirts of Harrisburg, and the Hamilton Health Clinic, which is in central Harrisburg, to identify subjects with the appropriate characteristics for in-depth interviews. The Hershey Clinic draws from a suburban and urban predominantly working class and middle class population, and the Hamilton Clinic serves a predominantly poor and black central city population. This subject pool provided variation in social characteristics of work and home environments.

The screening instrument was a questionnaire which identified respondents by occupation and spouse's occupation, age, address, and telephone number. Thirty-eight items were included which assessed the degrees to which respondents sought support and control and the degree they experienced social isolation and social press. The items measuring behavioral predispositions were those which were found in a previous student study to be most related to variation in perceived support and perceived control in a university environment. Most of the items measuring social press and social isolation were used before and had been established to conform generally to the criterion of Guttman unidimensional scaling. While none of the measures were considered to be fully-developed scales, all were sufficient to screen individuals for exploratory research.

This screening procedure yielded 186 completed questionnaires. The next procedure was to select persons for interviews whose scores fell into the following categories: high social isolation, high social press, low social isolation, and low social press. The objective was to secure 10 individuals who belonged exclusively to each of the four cells. Because of the limited size of the subject pool, refusals, unavailability, moving, and broken appointments, it was necessary to accept 7 individuals who belonged to more than one category out of 38 interviews which were completed. The criterion for inclusion in each category was to have at least 4 out of 5 responses on social isolation and social press measures in the same direction. This resulted in classes of individuals who agreed or disagreed generally with items indicating press or isolation, but relatively few subjects who were extreme in their score.

The interview procedure began with an explanation of the purpose of the interview and some of the terms used in questions to the subjects. Interviewers stated to subjects that they wanted to talk with them about their home and their work environments. It was explained that each environment consisted of the places in which they lived and worked and the places where they went in trips related to home or work activities. Each respondent was asked first about the difficulties which they encountered in their home environment, and then the things which made it easier to deal with these difficulties. The same two questions were asked about work environments. If a person was not presently working, interviewers asked about their former work environment to obtain information about their way of reacting to this environment, but this data was not used to analyze current states of press or isolation.

Figure 3-2 lists environmental factors which previous research or logic suggested might be related to social support or personal control. These were organized into categories of dimensions that might be related to planning and design variables. These categories were used as a guide

Figure 3-2

Environmental Perceptions Code

Population Characteristics

size
change
density
social composition

Functional Characteristics

workload
numbers & diversity of functions
pace and manning

Spatial Organization

number of satellite units
amount of control
dispersal and consolidation

Design Characteristics

setting scale
setting use
separation
connection
materials

Structural Characteristics

disintegration
dependence
routine
diversity

Physical Characteristics

physical stimulation
physical & spatial adequacy

Social Characteristics

social homogeneity
social interaction characteristics
social structure characteristics

Policy Characteristics

leadership style
participation and program

for probes. If a subject did not touch on these types of factors, the interviewer often asked about these factors, but the extent depended on the interviewer's perception of the need to probe a particular subject. The interviews were tape recorded on cassettes and lasted approximately 45 minutes to 1 hour and 15 minutes.

Data Analysis

Two graduate assistants analyzed the content and then recorded interviews into separate and distinct categories of response. This procedure was used to reduce data by organizing conversational responses into distinct perceived dimensions of environment. These dimensions were then "coded" in terms of categories reported in previous studies. This converted the data into categories related to findings of previous research; however, as previous research was not organized in mutually exclusive categories, consistent coding was not expected. The principal investigator, who conducted most of the interviews, then used coding sheets and playback of recordings to tabulate response patterns for each type of subject (i.e. high press, low press, high isolation, low isolation). The resulting analysis was based on responses common to those subjects in each category type.

These types were defined in two ways. First, individuals were classified by their social isolation and social press scores. Their responses were then analyzed to identify patterns of perceptions and experiences associated with high and low scores on each measure. The purpose of this analysis was to identify personal experiences and perceived environmental dimensions related to each psychological state. Second, the responses of individuals, classified by their predominant orientations, were analyzed in relationship to their social isolation and social press scores. Orientation was defined by the relationship of scores on predisposition measures to one another, with predominance of orientation indicated by the differences between the highest and lowest score. This analysis focused especially on a few individuals, with unbalanced predisposition scores. Thus, greater weight was given to their environmental perceptions than those of individuals with more balanced predispositions. The purpose of this analysis was to identify the relationships of environmental perceptions to behavior. The re-

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sponses of these individuals appeared to provide the clearest indications of the relationships of environmental perceptions to support-seeking and to control-seeking. For individuals with balanced predispositions, it was often difficult to disentangle relationships of attributes to each predisposition.

Both analyses were qualitative; but, in the course of analysis, generalizations concerning environmental dimensions inferred from the responses of one subject were checked to determine consistency with responses of other subjects of similar type. In the course of checking back and forth among subjects, conceptualization of dimensions were refined. While this procedure was quantitative, it involved such a high degree of interpretation that, at most, it represented merely a form of discipline for an essentially qualitative analysis. Qualitative methods were, however, appropriate for the research problem, which was to develop a conceptual basis for developing measures of environment.

Findings of Empirical Research

This analysis identified patterns of environmental experiences and perceptions associated with high and low social isolation and social press, indicating the dimensions relevant to facilitating social support and personal control. Contrasts between environmental conditions associated with high and low scores on each measure were considered to indicate values on dimensions relevant to personal control or social support respectively.

Social Isolation Pattern

Variation in degree of social isolation was strongly and unquestionably related to the degree to which individuals find places in which they perceived that they belong. Of the 12 respondents with high isolation scores, all of them explicitly referred to their lack of place in which they felt that they belonged. Of the 11 respondents with low social isolation scores, all identified places in which they perceived themselves to be fully accepted.

The term "place" is literal, not metaphorical. It refers to a physical place in space with people in it. It does not refer to dissatisfaction with social role. Of the 12 high isolation respondents, 6 were satisfied with at least one of their social roles, and sometimes with all of their social roles; but while satisfied with their social role, they were dissatisfied with social or physical aspects of the place in which they carried out these roles. "Place" has a connection with the concept of social status. Most of the high social isolation people in this sample might be considered of marginal social status. The concept of marginal social status does not explain, however, the entire perception of place. The perception of not having a place in which one belongs goes beyond the relationship of the individual to society and his social identity -- although not having a place in which one belongs seems to be experienced by people of marginal social status.

Not having a place in which to belong was strongly related to not having a work setting in which respondents belonged. Nine of the 12 high isolation respondents were not employed, and of the 3 who did work, two intensely disliked their work place. The exceptional case of the individual who worked, and liked her work place, was an incredibly homeless 30 year old black woman. As best as could be determined from the interview, she had been convicted of abusing her two fatherless children. She perceived that she was compelled, in some unexplained way, to live in a public housing project apartment with a woman who had legal custody of her children. The respondent expressed extreme resentment for the woman, who threatened her with arrest and physical beatings, and dislike of the place in which she lived.

Of the 11 low isolation respondents, 8 were employed in regular jobs, and of the 3 who were not regularly employed, all were involved in either educational or religious activities (or both) concerning which they expressed considerable satisfaction. Those with high social isolation were not involved in these types of settings. Of the 12 high isolation respondents, only 2 reported participation in religious activities, and this was limited to attendance at church services. Low isolation church participators were also involved in auxiliary church activities. Thus, variation in social isolation is related to variation in degree of active participation in organized settings.

The clear evidence that belonging to settings was important for support raises the question of what prevented these subjects from be-

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longing to these places. The general answer appears to be that high isolation respondents were unable to integrate their behavior with the standing patterns of behavior of settings. Some had difficulty with both finding and participating in work settings. These difficulties, in turn, seemed to be related to what they perceived to be problems related to unstructured attributes of settings along a variety of dimensions -- travel connections, social structural instability, organization of functional activities, territorial belonging and handling authority and change. Others had difficulty with maintaining any standing patterns of behavior in their home settings. The difficulties were similar to those in work settings, except these were perceived to stem from the failure of others rather than self to conform to setting requirements. The result is a similar lack of perceived structural stability.

The foregoing pattern was associated with orientation to seek support. Orientation to seek support is defined by the relation of support-seeking predisposition scores to control-seeking predisposition scores. If an individual had a higher total score on support-seeking items than control-seeking items, such a person was designated as oriented to seeking support; if the converse relationship was present, a person was considered to be oriented to seeking control. In the high isolation group, 9 individuals were strongly oriented to support, 2 were weakly oriented to support, and 1 was oriented to control.

In the low isolation group, however, only 3 of 11 respondents were strongly oriented to support, 2 were weakly oriented to support, 2 were balanced, and 5 were oriented to control. The obverse general pattern of environmental perception was clearly present for the 3 low isolation respondents oriented to support. These individuals seemed to have settings in which they were well integrated. Their functions were clearly defined, their social and spatial contexts were stable, the places and people with whom they had contact were well-known, and they had clear direction and rules in their lives. In general, their behavior blended easily and effortlessly with their surroundings. This pattern was also present to some degree in people weakly oriented to support and balanced in their orientation.

The foregoing pattern was not found, however, among individuals oriented to control. Their low social isolation, and to some extent the low social isolation of persons with balanced orientations, was related to their exercise of personal control over their environment, particularly the time and space relationship between their involvement in work and home activities, so that they maintained their participation in settings at the level that they desired. These individuals had a strong sense of belonging to their settings, but they supplied the structure of their relationship to settings.

Social Press Pattern

In contrast to the high social isolation pattern, in which not belonging to settings is the problem, high social press is related to high involvement in settings. High involvement is related to the extent to which these individuals were responsible for managing settings: 6 out of 7* high press individuals were solely responsible for managing a setting of which they were a member. There were two overlapping patterns of high participation: extensive participation in many settings or intensive participation in few settings. The first is illustrated by one individual who was not solely responsible for managing a setting. She was a full-time employee, a mother, a housewife, and a collaborator with her husband in a state-wide campaign for elected office. Another individual had relatively limited responsibilities at work, but was solely responsible for raising a son, managing a household, pursuing a master's degree, and performance of social functions at home.

The second pattern is illustrated by two high press persons who only participated in one focal setting. One moderately high pressed man was retired and not involved in any outside activities. His high press was related to the dependence of his seriously disabled wife on him -- "completely -- physically and mentally", in his words. Another moderately pressed woman was unable to work and lived alone in housing for the elderly. She was preoccupied and bitter about losing her janitorial job as a result of disability and conflict with her supervisor. Her interview can only be understood in terms of her unlimited responsibility for disabled self (complete responsibility for all functions).

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*There were fewer individuals in this category than in the high social isolation group. It was difficult to obtain interviews from high press individuals as would be expected on the basis of their psychological state.

In contrast, low social press individuals participated in fewer settings and less intensively than high scores persons. Of the 9 low press individuals interviewed, only 4 had jobs, in contrast to 5 out of 7 of the high press group. Of the 4 who worked, 3 had limited responsibilities at a low level, and all 4 worked in jobs with regular and limited hours.

There were a few exceptional individuals in the low press group who also seemed to have fairly extensive or intensive participation. One difference between these individuals and the high press group appears to be manning. All individuals in the high press group participated in an undermanned setting. This was associated sometimes with their perception that they were leaving another setting undermanned. In contrast, individuals in the low press group perceived their settings as overmanned and occasionally optimally manned. The person with the most responsible and demanding job in the low isolation group explicitly stated that he was never overworked if he had enough people to which to delegate work. A second difference appears to be limited hours of attendance. The individual who could delegate also appeared to work regular and limited hours for a public utility. In another case, a man spoke in considerable detail of serious mental and emotional problems which he experienced in two previous jobs with long hours, and of his decision to accept lower pay in a job with limited hours.

This raises the question of why highly pressed individuals are too involved in settings. One answer appears to be that undermanned settings may attract persons oriented to control because there may be more opportunities to experience control in undermanned than optimally manned or overmanned settings. Thus, the most highly pressed person in the sample (scoring the highest possible score of 20) was a retired governmental executive oriented to control. Convinced that everyone should have "an interest" when they retired, upon retirement he became simultaneously involved as the manager and leader of two voluntary organizations for elderly and of a major arts festival. He perceived that he was unable to accomplish the functions for which he was responsible, despite 12 to 14 hour days, because he lacked control over resources.

The same pattern is found in the second most highly pressed individual, who was strongly oriented to control, in her efforts to manage the broad and diverse functions of her functional units in a large organization. In both cases, these respondents were concerned with their lack of control over resources. In neither case did these individuals reduce their functions to match their resources; instead, they strived to increase their resources to match their functions. They did this despite the fact that it was obvious that the factors limiting these resources were beyond their personal control.

The question arises as to why they persisted in this behavior. This appears to be related to their position of leadership in the setting. These high press individuals perceived themselves to be responsible for the survival (often the literal biological survival) of others in their setting. In effect, their responsibility for others was perceived as unlimited. This perception of leadership status in relation to functions was common to all high press individuals. Of the 7 high press individuals two perceived themselves to be professionals responsible for a function which they believed should be or was autonomous; 3 perceived themselves as entirely responsible for care of dependent people in their household; and 1 perceived herself as sharing responsibilities with her husband for a state-wide election on which their future status and livelihood depended. In contrast, none of the 9 low press persons saw themselves as having this degree of independent responsibility for others in their settings. Of the 4 people who worked, all perceived themselves as responsible for limited and specialized functions within an organization in which others were top leaders. At home, these people shared responsibilities with spouse, parents, and kin. Of the 5 people who did not work, all were married to spouses who shared responsibilities for managing of the setting and, in some cases, was the person who took primary responsibility.

The general pattern associated with high press was, therefore, one in which individuals perceived that they alone must manage undermanned settings so that its functions, and even its occupants, survive. This appeared to be related to objective characteristics of organization of the setting. Such settings appeared to be relatively autonomous in function and relatively dependent for resources. For people strongly oriented to control, leadership of undermanned settings appeared to be sought to experience control over settings; but not all people with high press scores in this sample are oriented to control. Most have control-seeking scores at about the average level, but a few had higher support-seeking scores than control-seeking scores. In these latter cases, it appears that lack of control and consequent high press stem from additional functions imposed on settings which were originally adequately manned or loss of manning occurred for settings with stable functions. Examples of new functions include disabilities to self and others, and extra and new activities undertaken by spouse. Examples of loss of manning include divorce from spouse and conditions limiting "support." By support, these individuals refer to material, organizational and professional resources which assist in performing the functions for which they are responsible. Persons with low press who were oriented to support seem to have maintained the same level of manning over a considerable period of time and to have been able to reduce the functions of settings when manning is reduced. This does not seem to occur when persons are strongly oriented to control.

Demand Dimensions

Difficulties which individuals experienced with their environments, and which did not appear to vary with either their psychological states or their predispositions, implied attributes of environment which demanded adaptation. These can be divided into three categories. The first category of dimensions may designate performance demands. These are the demands for behavior to carry out the functions of a functional unit. The second category of dimensions are physical demands related to sensory stimulation. The third category of dimensions are involvement demands. Participation is defined in terms of the degree to which individuals are responsible for functions.

The interviews suggest that demand factors do not differentially affect support-seekers and control-seekers; instead, these factors impose adaptive loads on individuals, with the effect varying with facilitative factors. Demand factors at work appear to affect adaptations at home and vice versa. This is implied by evidence that individuals sought personal control or social support at home when this was not facilitated at work and vice versa.

Table 3-1 presents a list of these demand factors and operational-definitions of demands. The number of functions which a functional unit performs obviously varies in work units, but this is equally true in home units. In particular, considerable variation occurs among households in such functions as raising children of different ages, care of sick and disabled, and responsibilities for maintenance. The work load arising from such functions may vary with the number of children in each age category, special education needs, severity of illness and extent of disability of residents, and conditions of housing and the neighborhood. Functional units also vary in the extent to which each must adapt to external demands -- as for example, services to customers in work units and juvenile street groups in home units.

In carrying out functions, work units, especially, may vary in the extent of excessive or variable thermal, accoustical, and other types of stimulation. To a lesser extent, this variation is found between rural and suburban home units.

The effect of these demands on the individual appear to have depended on their degree of involvement in the functional unit. For example, the housewife who is at home much of the day has greater exposure to performance demands at home than her employed husband. This effect is considered in attendance, which is simply the amount of time a person spends in a functional environment (including focal setting and then satellite setting). Equally important, however, is the degree of leadership in a functional unit. Leadership is defined by the degree to which the individual is assigned to responsibility for managing the functions of the setting. The highest leadership demand is represented by one individual being responsible for managing all the functions of the setting; when responsibility is shared with another person, the leadership demand is correspondingly reduced. Thus, it is not surprising that, among the individuals interviewed, high adaptive demands were often associated with executive responsibility for an autonomous functional unit and with sole responsibility for raising small children or caring for disabled persons. It is less obvious, however, that single individuals were exposed to considerable adaptive demands, not so

Table 3-1

Demand Factors

Factor Dimensions	Definition of Dimension
Performance Demands	
Number of Functions	The number of functions of a social unit
Work Load	The amount of work related to each function
External Load	The amount of adaptation to external environment in performing work functions
Physical Demands	Physical stimulation
Involvement Demands	
Attendance	Amount of time in functional environment
Leadership	Degree of responsibility for managing functions

much because of high performance demands, but because of their entire responsibility for leadership of these settings. Those with the lowest level of adaptive demands seemed to have fewer functions to perform at work and at home and rarely seemed to have leadership responsibilities.*

However, degree of involvement is related to behavior. Because control-oriented persons tend to seek leadership positions, they tend to have high involvement, and thus tend to be exposed to adaptive demands at work. Support-oriented persons tend to confine activities to familiar settings; thus, they tend to have high attendance at home, and in the absence of others, high involvement. If either behavioral adaptation facilitates personal control and social support, it may also offset adaptive demands, but if it does not, adaptive demands of certain types may be associated with each behavior (e.g., performance demands at work for control-seekers; involvement demands for support-seekers at home).

Facilitative Dimensions

These dimensions were identified by comparing perceptions and evaluations of environmental attributes by individuals with contrasting social isolation and social press scores and with contrasting orientations, as shown in Figure 3-3. Positively-evaluated attributes present in the lives of respondents with low scores in social isolation and social press, or positively evaluated attributes absent in the lives of high score respondents, were considered to measure high values in facilitative dimensions. If negatively-evaluated attributes were mentioned by respondents with high scores on psychological states, these were interpreted as low values along the same dimension defined by a positively-evaluated attributes. According to the psychological states with which environmental attributes were related, each was classified as

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*It should be mentioned at this point that individuals who are involved a great deal in religious activities, and possibly to some extent in educational activities, may be sharing leadership demands. They often report that their religious or educational activity provides direction and guidance in handling their work and home problems.

Figure 3-3

Analytical Basis for Development of Concepts of Dimensions

Comparison of evaluations and perceptions of attributes by respondents with contrasting orientations.

Comparison of evaluation of and perception of attributes by respondents with low scores on psychological state measures with those with high scores.

	Control-Related	Support-Related
High Values	High value on control attributes	High value on support attributes
Low Values	Low value on control attributes	Low value on support attributes

Facilitative Dimension

related to social support or personal control. These defined vertical axes of dimensions.

Differences between perceptions of these attributes of persons with contrasting orientations were compared, defining the horizontal axes of these dimensions, which differentiated attributes by predisposition. This analysis, while crudely quantitative, involved relatively few cases and was highly qualitative. It resulted, however, in a logical matrix for classifying perceptions to reveal dimensions. The structure of each dimension was, thus, defined as indicated in Figure 3-3.

A problem in deriving these dimensions is that support-oriented respondents rarely had a clear idea of what they wanted. What they needed is inferred from what low isolation, support-oriented persons had. High isolation, support-oriented persons seemed to be lost, which is consistent with their inability to find places to which they belong. While low isolation, support-oriented persons were not lost, they also did not seem to have a clear idea why they were content. If, however, support-oriented persons knew exactly what they wanted, they would be oriented to seeking out environments, which is control-seeking behavior.

As dimensions were identified, logical consistency among dimensions implied the common underlying phenomena to which various dimensions appeared to be mutually related. The dimensions were, therefore, grouped in categories: participation, function, territoriality, social control and social change.

Participation Facilitation. The degree to which individuals participate in functional units may be facilitated or impeded by their functional environment. These dimensions are shown in Table 3-2. Control-oriented people want no limitations on attendance and leadership responsibilities; a flexible schedule in terms of amounts and times of work; and self-defined roles. This results in a certain degree of vulnerability to lack of control: these people tend to choose terms of participation in which there are no external limits on their participation. Support-oriented people tend to be concerned more with simply attending settings at lower levels of responsibility, permanence, regularity of hours, and clearly-defined functions. While perceptions of home settings were less clear, support-oriented people with low social isolation did, in fact, have a permanent home, very regular

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Table 3-2

Participation Facilitation

Dimensions High value Low value	Perceptions	
	Control-Related	Support-Related
Attendance	Unlimited Limited	Too little Too much
Penetrance	High Low	Low High
Membership Status	Voluntarily chosen	Permanent Temporary
Schedule	Flexible amounts/time Inflexible amounts/time	Regular hours/time Erratic hours/time
Functional Role	Self-defined Defined by others	Clearly-defined Unclearly defined

hours, and clearly-defined (usually traditional) roles in the home and neighborhood. They were often women whose husbands took primary responsibilities for decisions. Support-oriented people with high isolation did, in fact, usually lack these conditions at home.

Functional Facilitation. These dimensions pertain to characteristics of the environment which facilitate the performance of the function of the environment. Here again orientation seems to account for marked variation in evaluation and perception. Control-oriented people tend to want optimal manning, variable pace, functional space, efficient equipment, variable routines and independent work. Support-oriented persons seem to want quite different conditions: stable manning, steady pace, stable spatial relations, familiar equipment, stable routine, and to work with others. These are shown in Table 3-3.

With respect to these dimensions, the concept of optimality must be considered. Neither support nor control seems to be provided by extreme conditions; but rather, in both cases an optimal state is sought. For example, undermanning does not seem to be a condition sought by anybody. Rather, control-seekers want optimal manning; support-seekers seem to want stable manning, and as they like a steady pace, they do not seem to want overmanning. This desire for stability may, however, have the consequences of overmanning.

Territorial Facilitation. Territorial facilitation differs from functional facilitation in that it is not directly related to the performance of functions. It is instead related to the degree of isolation and press which is experienced, which, in turn, may indirectly affect functional performance.

Control-seeking people seem to seek collaboration with individuals in doing things, spatial freedom, control over boundaries, control over the use of space, and cooperation from others in their activities. Support-oriented people, in contrast, seem to seek social homogeneity, presence of a familiar group, low contact with outsiders, physical evidence of personal possession by the group, and others to care personally for them. This is shown in Table 3-4.

Social Control Facilitation. All of the previous dimensions tend to consist of attributes of focal settings. This may localize behavior. Moreover, if territorial factors are optimized, this might tend to

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Table 3-3

Functional Facilitation

Dimensions High value Low value	Perceptions	
	Control-Related	Support-Related
Manning	Enough people, resources Lack people, resources; not enough to do	Amount of work stable Fluctuating work load
Pace	Variable Constant high and low	Steady Unsteady
Spatial Relations	Right amount of space Too much or too little	Constant spatial relations Variable spatial relations
Facility Relations	Equipment adequate Lack equipment	Equipment familiar Unfamiliar equipment
Routine	Variable Fixed	Stable Unstable
Work Organization	Work independently Dependent on others to carry out work	Working with others Work alone

Table 3-4

Territorial Facilitation

Dimensions High value Low value	Perceptions	
	Control-Related	Support-Related
Homogeneity	Collaboration in doing No collaboration	Same type people Different type people
Spatial Integration	Freedom of movement Constriction of movement	Same group present Individual present different times
Spatial Separation	Control of boundary Rigid or no boundaries	Low contact outside High contact outside
Possession	Control use of space No control use space	Personal objects Impersonal objects
Intimacy	Cooperation of others Lack cooperation	Others care Others don't care

result in the development of fragmenting tendencies within work organizations and within communities from primary attachment to local settings. Thus, environments may be conceived to facilitate social control by external authority. The interviews suggest, however, that different forms of social control have different effects on individuals, depending on orientation. (See Table 3-5)

Control-oriented people appear to prefer flat hierarchy, flexible social relations, achieved status, and a leadership style which stresses opportunities to achieve their own goals, self-direction, and self-imposed rules. In contrast, support-oriented persons seem to prefer tall hierarchy, highly patterned social relations, prescribed statuses, and a leadership style in which they receive much personal recognition and attention, clear direction and have clear, strictly-enforced rules.

No attempt here has been made to evaluate the effectiveness of either approach for organizational or community control. The point is that the different approaches to social control seems to have different effects on support and control, whatever their effectiveness for organizations and communities. It may be that certain approaches are more or less be effective, depending on their psychological effects.

Social Change Facilitation. An extreme amount of social control, however, might result in stagnation. Thus, environments may be organized to facilitate social change. The manner of organizing the environment to permit social change seems to have effects on control and support, as suggested by Table 3-6.

The interviews suggest that low personal control as a consequence of other environmental factors tends to facilitate social change for control-seekers. The degree to which this potential for change is facilitated seems to depend on the degree of autonomy of their functional unit, access to authority and respect for them. Low support seems to increase willingness of support-seekers to accept change, but the degree to which it occurs seems to depend on whether they have support from collective organization, personal consultation and concern for their personal welfare.

Table 3-5

Social Control Facilitation

Dimensions High value Low value	Perceptions	
	Control-Related	Support-Related
Hierarchy	Flat - adequate authorization Tall - too centralized	Tall - someone in charge Flat - no one in charge
Social Structure	Informal, flexible Too formal, rigid	Know what to expect Uncertainty, avoid others
Status	Status achieved Status prescribed	Prescribed status clear Prescribed status unclear
Motivation	Can pursue own goals Goals of others control	Personal recognition given No recognition & attention
Direction	Self-directed Directed by others	Clear direction by others Lack direction by others
Reinforcement	Latitude of action Rigid rules	Strict, clear rules Has unclear rules

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Table 3-6

Social Change Facilitation

Dimensions High value Low value	Perception	
	Control-Related	Support-Related
Other Factors	Low control High control	Low support High support
Function Autonomy	High autonomy Low autonomy	Collective organization (unions) Individual employment
Communication to Authority	High access Low access	High consultation Low consultation
Esteem	High respect Low respect	Care personal welfare Indifferent person

Conclusions

Exploratory research identified and defined patterns of adaptation related to social isolation and social press and environmental dimensions to be investigated in further research. The patterns of behavioral adaptations were consistent with the findings for the laboratory study of behavioral predispositions. In that research, control-seeking as measured by predisposition scales and by observations, was related to active behavior, while support-seeking, measured in the same way, was related to passive behavior. The same differences were found in this study. Other insights with regard to control-seeking and support-seeking behavior will be considered subsequently in refinement of the conceptual model for this research.

The findings of this research with respect to demand dimensions of the environment were generally consistent with the concepts of these factors developed from review of previous epidemiological research. Performance and physical characteristics seem to impose adaptive demands on individuals. These were conceived as functional and structural characteristics, but their characteristics seem to be better described as external work loads imposed on the individual and as effects of numbers of functions. Population characteristics did not emerge as a perceived demand factor. This may be explained by lack of sufficient variation in these attributes at the urban level within the Harrisburg metropolitan area. However, from interviews in the homes of some of the subjects, it is clear that there was considerable variation in household unit densities: some households were extremely crowded and others were not. The effect of involvement, defined in terms of attendance and leadership, does not appear to have been considered to any great extent in previous epidemiological research and appears to be a major influence in determining adaptive demands for individuals.

The findings of this research with regard to facilitative dimensions do not fit readily into the conceptual frames of references provided by either previous epidemiological research or by existing approaches to environmental planning and design. This is an important finding. This research assumed that present environmental concepts were not appropriate for improving the relationships between urban environments and well-being. As assumed, these findings suggest that the relevant attributes facilitating social support and personal control differ substantially from each other, and are, in some cases, defined by conflicting attributes. Some of the attributes are not usually considered in epidemiological research or in urban planning and design.

The purpose of this exploratory research is, however, to identify and to define dimensions of functional environments which may be related to facilitating social support and personal control. Qualitative methods of exploratory research, which are suitable to the problem of conceptualizing attributes and dimensions, are not appropriate for drawing conclusions as to relationships of these attributes to predispositions. This requires further methodological research taken up in the next chapter of this report.

IV. DEVELOPMENT OF ENVIRONMENTAL MEASURES

In the foregoing chapter, environmental dimensions were defined in exploratory research which consisted of environmental attributes conceived to facilitate social support and personal control. The procedures were essentially qualitative. The research in this chapter is quantitative, with the methodological objective of defining objectively-measurable attributes of functional environments. More specifically, the purposes of this research are to reduce the number of dimensions to a manageable proportion by testing for replication, to cross-validate inferences from qualitative data concerning relationships of preferred environmental conditions to behavioral predispositions, and to refine concepts of the objective environmental conditions that facilitate social support or personal control.

Scope and Aims of Research

In this connection, it should be observed that the scope of this research was ambitious. In discussion of plans for this research with our Advisory Committee, it was evident that two contrasting views were taken of this research. On the one hand, the view was expressed that the problem of developing valid measures of attributes of home and work environments was enormous and that we would be advised to use measures already developed by others. On the other hand, the contrary opinion was advanced that the development of measures of home and work environments was one of the most significant aspects of this research and should be continued. The differences in opinion to some extent seemed to reflect an epidemiological orientation to the research, which focused on the problem of social support and personal control as causal linkages between urban environments and personal well-being, and an environmental planning and design orientation to the research, which recognizes the limitations of present concepts and measures of urban environments for use in urban planning and design. The original research plan was designed to address both problems. In the light of this advice, however, we formulated a programmatic view of our task: first, it appeared to us to be necessary to identify specific, objectively-measurable dimensions related to facilitating personal control and social support in order to identify the attributes of home and work environments relevant to the research problem and, second, these findings will be used, in future research, to provide a focus for a search for existing measures of environmental attributes relevant to both the epidemiological and environmental planning and design problem. In the absence of this focus, we found that it was virtually impossible to utilize knowledge of both epidemiologically-oriented behavioral scientists and planning-oriented researchers to identify relevant measures. Yet it was also true that it was impossible to develop fully-validated, objective measures of attributes of urban environment within the time and money limits of this project.

It was also decided that further methodological research on the development of environmental measures should be limited to facilitative dimensions. Both the search of epidemiological literature, and the exploratory interviews reported in the previous chapter indicated that demand dimensions of urban environments are far better understood than the facilitative dimensions.

Research Design

As a result of exploratory research, certain concepts of facilitative dimensions were developed. The methods of doing this were qualitative, relying on insight and interpretation of relatively unstructured interview data. From this subjective data, certain measurable preferences were identified and their relationships to social support and personal control were inferred from analysis of the behavioral predispositions and psychological states of respondents and their perceptions. This presented four research problems.

Research Problems

First, qualitative data and analysis is notably unreliable, especially when, as in this research, few cases are studied. Moreover, the exploratory study was designed to identify possible facilitative dimensions and, therefore, uncertainties were always resolved by accepting uncertainty. This resulted in a very large number of dimensions. Thus, the first problem was to identify replicable dimensions by determining whether quantitatively - defined descriptions of these dimensions had discriminant validity. Second, the relationships of environmental attributes to behavioral predispositions, inferred from qualitative data, needed to be cross-validated by quantitative methods. This was a problem of testing the validity of working hypotheses. Third, the subjectively-defined preferences needed to be redefined in terms of objectively-defined attributes which were measurable. Fourth, attributes of work and home environments had to be defined in commensurate terms. A theoretical assumption of this research was that both work and home experiences affect well-being by facilitating the same behaviors. In order to assess relative contributions of each type of urban setting to personal well-being, it is necessary to measure each separately, and in order to measure their interactions with one another, it is necessary for these measures to be commensurate.

Research Methodology

The approach selected was to develop a highly-structured questionnaire with descriptions of environmental conditions, and by sampling subjects with varied social and personal characteristics, assess the relationships between preferences for these environmental conditions and behavioral predispositions. Environmental preference would be measured by paired, forced-choice statements of preferences for environmental conditions which were objectively-defined and measurable. Each statement would state a positive evaluation of an environmental attribute previously conceived to be related to a predisposition. By pairing each statement with another preference statement, each pair would represent contrasting conditions along a dimension of environment. The applicability of the same dimensions to environmental conditions in work and home environments would be tested by separate measures of each dimension written to be specific to each type of place. Effects of variation in personal and social characteristics, and experience with work and home environments, would be taken into consideration by drawing subjects from a variety of settings and by statistical controls. These data would permit analysis of the quantitative relationships of environmental preferences, representing objective conditions along a dimension, to behavioral predispositions of subjects, and the consistency of these relationships between home and work environments. This research was thus designed to define and to measure preferences for objectively-defined specific environmental conditions conceived to facilitate social support or personal control in terms which permit testing hypotheses with regard to their relationships to behavioral predispositions formulated in exploratory research.

Description of Research Procedures

Questionnaire Construction

1. Environmental preferences were measured by forced-choice paired statements of preferences for objectively-defined environmental conditions. Choices were dichotomized in two ways. First, choices were dichotomized by statements presumed to differentiate preferences of control-seekers from those of support-seekers. As indicated by the conceptual analysis in the previous chapter, environmental attributes were conceptualized in terms of two kinds of differentiation of preferences along a horizontal axis: qualitative and quantitative. Qualitative differentiation refers to differences in kind of environmental conditons. Quantitative differences were differences in the degree or level of environmental conditions. Thus, statements were paired to define dimensions of environment in terms of qualitative and quantitative differences of environmental attributes along preconceived dimensions.

In some cases, there was a high degree of uncertainty as to whether relationships of preferences to predispositions depended on the relative magnitude of the attributes. At a very low or high value along the vertical axis of a dimension, a given environmental condition may not be related to predispositions because it does not facilitate social support or personal control at that level. Ideally, attributes would be defined at several different levels of magnitude, at each end of the dimension, and alternative mathematical structure would be examined; but in view of the permutations and combinations required, and money and time limits, a practical compromise had to be accepted. This was to write each preference statement to avoid implying any certain magnitude of environmental conditions. Thus, the questionnaire items measured preferences at an unknown point along the vertical axis defining different degrees of magnitude of environmental attributes.

In addition, there was sometimes uncertainty as to the best measure of preferences. Thus, in a few cases, two pairs of statements were used to measure the same attribute. Finally, separate paired preference statements were developed to measure preferences in both home and work environments. The same dimensions were thus tested by different preference statements, carefully designed to be commensurate measures of the same underlying dimensions. The conceptual basis for the measures are summarized in Table 4-1.

2. Measures of personal and social characteristics were also developed. The following personal and social attributes were measured: sex, education, age, race, ethnic identification, household size, number of children, and occupation. Factors which might obscure relationships of predispositions to preferences were measured, including the number of disabled persons in the household, degree of household decision-making responsibility, amount of experience with homes (number of places lived and length of residence), degree of job autonomy, and amount of experience with work (number of places worked and length of employment).

3. In the design of questionnaire items to measure predispositions, certain complications were presented. Scales to measure behavioral predispositions had not been developed when the questionnaire was designed. While the research was planned so that field studies of environmental factors were scheduled to be carried out after development of scales in the laboratory experiment, delays in the receipt of research funds and additional time-consuming observational procedures designed into the laboratory simulation stretched out the time for the

Table 4-1

Concepts of Relationships of Preferences for Environmental Attributes to Predisposition by Dimensions

Factor Dimensions	Preferences by Predispositions	
	Dominant	Subordinate
Participation		
Attendance	More outside home	More inside home
Schedule	Organizes participation	Compels participation
Membership Status	Self-defined	Defined by others
Penetrance	High	Low
Function		
Manning	Optimal	Stable
Pace	Variable (fast/slow)	Steady (moderate)
Spatial Relation	Space fits function	Constant relations to other
Facility Relation	Adequate for function	Familiar place
Organization	Work independently	Work with others
Routine	Limits work	Specifies work
Territoriality		
Homogeneity	Collaborators with similar interests	Group with similar values
Integration	Free movement out of setting	Same group present same time
Separation	Control of boundary	Low contact outsiders
Possession	Control use of space	Personal marking
Intimacy	Cooperation from others	Respect from others
Social Control		
Hierarchy	Flat organization	Tall organization
Structure	Flexible, little	Rigid, much
Status	Achieved	Prescribed
Motivation	Intrinsic (own goals)	Extrinsic (recognition and attention)
Direction	Self-direction	Directed by others
Reinforcement	Own contingencies	Strict, clear contingencies
Social Change		
Functional Autonomy	High	Low
Communication to Authority	High	Low
Esteem	High respect	High affection

completion of this research and consumed time and money.* Thus, the field research had to be carried out before scale development was complete in order to take advantage of available personnel and time. However, the measures of predispositions which were selected for inclusion in the questionnaire were the 10 predisposition items in the student study which were the most highly correlated with observed support-seeking and control-seeking behavior. The items were adapted to the format of the interview by using a forced-choice format between "often this way" and "seldom this way."

When responses to these items were analyzed, it was found that the best distributions were obtained for 5 items which had subsequently been found, in the student study, to be measures in the Dominant Predisposition Scale. One of these items had a 72%-28% distribution, but the remaining 4 had nearly even distributions. This scale** was selected for use as the measure of support-seeking and control-seeking predisposition. (See Table 4-2) In the development of predisposition measures, it had been found that high scores on the Dominant Scale were the best single predictor of observed control-seeking behavior and low scores were the best single predictor of support-seeking behavior.

Pretests

The questionnaire was pretested by administration to clerical, janitorial and professional employees of a large state university, a few students, and housewives. Subjects completed the questionnaire by

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*After approval of funding, and determination of starting date, NSF decided to "split-fund" the project, resulting in a two month delay in establishment of an authorized budget beyond the scheduled starting date. There was an additional three months required for observation and coding of data by the change from the BOSS procedure of simultaneous observation, coding, and data entry.

**One item in the Dominant Scale was not included among these in the questionnaire. This was "I find that arguments upset me," which was negatively related to control-seeking behavior and positively related to support-seeking behavior in the laboratory simulation. However, in a subsequent sample which will be described later in this report, it was found that this item was poorly related to the whole scale and by eliminating this item the Alpha index of reliability was improved (.815).

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Table 4-2

Dominant Predisposition Scale: Environmental Preference Study

	Generally speaking, I am:	
	OFTEN THIS WAY	SELDOM THIS WAY
I speak in an authoritative manner.		
Even if people are difficult, I can get them to change their minds.		
In a group of people, my opinions usually carry a lot of weight.		
I can usually get people to go along with me.		
People think of me as a direct and forceful person.		

themselves and were asked to comment about clarity of items. After analysis of responses, the subjects were questioned to determine their reasons for responses which seemed to deviate from their general pattern of responses or from the pattern which was expected for the subject by personal knowledge of their style of behavior. Preference items were rewritten and tested again. (See Appendix C for questionnaire)

Data Gathering

The respondents to the questionnaire were volunteers obtained from household calls in a low-income and a high-income neighborhood, visitors to a large regional shopping center in the Harrisburg metropolitan area, employees of the purchasing department of a major state university, and both clerical and managerial employees of a locally-owned Sears-type department and hardware store in State College, Pennsylvania. The objective in selecting subjects from these environments was to obtain a heterogeneous group of adults that lived and worked under a variety of conditions.

Subjects were given an explanation of the study after which a signed, informed consent form was obtained. Each subject was given $5.00 for completion of answers to all items in the questionnaire. Subjects responded to all but one question by checking pre-structured responses. Little or no assistance was asked in interpreting the instructions or questions, and many respondents completed the questionnaire without the presence of the investigator. The average amount of time required was about 40 minutes. Many respondents reported that they enjoyed answering the questionnaire and some even volunteered to recruit additional respondents for the investigators.

Forty-six questionnaires were completed in August, 1978. Preliminary analysis of the characteristics of the subjects indicated that about two-thirds of the sample was female and that lower occupational status persons were underrepresented. Twenty additional completed questionnaires were obtained at the Harrisburg shopping center in order to increase the heterogeneity of the sample.

Data Analysis

Frequencies of responses by each item were computed. It was found that there was a sufficient range in distribution of responses to most items measuring environmental preferences. For three items, almost all the respondents chose one of the two statements. These were eliminated. There were other items with uneven distribution, but these were not eliminated at this stage in the analysis.

The next procedure was to assess possible distorting effects of sample characteristics on the relationships between predisposition and each preference measure. Social, personal, and environmental characteristics were examined by zero-order and partial correlation coefficients. Personal and social characteristics, measures of variation in length and diversity of environmental experiences, and work place and household roles and characteristics were separately controlled. Effects of these characteristics were identified by comparing the number of significant correlations and their strengths with and without control. This resulted in eliminating some subjects from the sample.

The next procedure was to cross-tabulate responses to measures of environmental preferences with dichotomized measures of behavioral predispositions. Low scores on Dominant Scale items were used to measure predispositions to support-seeking Subordinate behavior and high scores were used to measure predispositions to control-seeking Dominant behavior. In the development of predisposition measures, the Dominant Scale was an equally valid predictor of each observed behavior.

Pearson product moment correlation coefficients were used to measure relationships between predispositions and preferences. This procedure may be questioned in view of the dichotomized nature of the data. However, while the maximum coefficient is limited by the correspondence of the marginals in most cases to less than 1.0, these were appropriate measures of the trends in relationships among the variables.

This analysis identified items which discriminated preferences by predispositions. Indiscriminant items were then eliminated, reducing the number of items. The relationships of preferred environmental conditions to predispositions were compared to predicted relationships in working hypotheses in order to assess construct validity. The resulting pattern of responses were considered to define attributes along facilitative dimensions.

Preference measures which were not related to predispositions as expected were analyzed. An intercorrelation matrix was then generated. This resulted in the concept that dimensions were system attributes. The relationships between cluster "scales," and predispositions, were determined to assess the validity of the conceptualized interrelationships. The final steps were to analyze distributions of responses to the measures of preference to assess quality of items and to define attributes of facilitative dimensions in terms of degrees of salience to predispositions.

Revision of Sample

Effects of Age and Experience. The first procedure was to identify characteristics of subjects which might affect relationships of measures of environment preferences to predispositions. Partial correlation analysis revealed that controlling for age, number of places lived, and number of places worked seemed to increase the number of significant relationships between measures of predispositions and preferences. The sample was too small to break down responses by these variables and compute separately their relationships. It was decided to eliminate the individuals from the sample who fell in the lowest age category (under 24), who had worked at only 1 or 2 places, and who had lived in only 1 or 2 places. The assumption in this decision was that if individuals had little length and variation in experience with home or work environments, they were unlikely to have learned what environmental conditions they prefer. This assumption was checked by recomputing zero order correlation coefficients with this qualified sample. Despite the loss of 15 respondents from the procedures, there were more significant relationships between predispositions and preferences than with the original sample of 66. The revised sample is described in Table 4-3.

Sample Characteristics. The sample resulting from eliminating the youngest and least experienced subjects appeared to be appropriate for the purpose of this research. The subject selection procedure was intended to obtain a sample of adults with variation in personal and

Table 4-3

Personal and Social Characteristics of Subjects

Characteristics	Number	Percentage
Sex		
Male	23	45
Female	28	55
Age		
25-44	28	55
45-64	13	33
65 and over	9	17
Education		
Less than high school	5	10
High school	25	49
College or more	21	41
Race		
White	46	88
Non-white	6	12
Ethnic Identification		
Very strong to strong	28	60
Not very strong or none	23	40
Household Size		
1-2 people	23	45
3-4 people	21	41
5 or more	15	14
Dependent Children in Household		
None	32	63
One or more	19	37
Disabled Persons in Household		
None	41	80
One person	10	20
Employment		
Presently employed	33	67
Not employed	18	33

social characteristics drawn from a variety of environments. It was not intended to be a representative sample; the objective of the research was not to study either Harrisburg or State College, but instead to develop measures of environment. For this methodological purpose, the characteristics of the sample had sufficient variation. The limitations of the sample were that it contained few blacks, few persons with less then a high school education, and few industrial workers. While it is possible that race may influence environmental preferences, there is no indication that this is the case; previous exploratory research suggests that race is more likely to influence environmental location and goal-attainment than preferences. Lack of representation of industrial workers probably affected results. Studies of Self-Direction and Conformity suggest that lack of personal control over work in industrial jobs may be a major source of conformity (cf. Kohn, 1977). These sample limitations, however, would have the effect of making it more difficult rather than easier to establish significant relationships.

Findings of Research

Reliability of Interview Observations

The first problem was to identify the measures which were significantly related to predispositions. This represented both a test of the reliability of observations in exploratory research and a method for reducing the number of environmental attributes to a manageable size.

A level of significance of relationship of .20 or less was considered to be sufficient evidence that preference measures were significantly related to variation in predispositions. The use of this level of significance is justified by the objective of the research, the specificity of the measures, the stage of development in the measures, and the range restriction in the data. According to the programmatic assumptions of this research, the objective at this stage is to maximize discovery of measurable environmental attributes which are likely to facilitate social support and personal control rather than to test for relationships of these attributes to behavioral predispositions. Thus, predictions of relationships of preference measures to predispositions in working hypotheses is a method for assessing and revising concepts and measures of facilitative dimensions. The risk to be avoided is rejection of a relationship which may be true rather than a relationship which may be false. Accepting a relationship which has probability of .20 of being false (rather than using the conventional .05 probability) appeared to be appropriate in terms of this objective.

There were 55 items in the questionnaire which measured environmental preferences. At the .20 level of significance, frequency of choice between preference measures significantly varied by predisposition for 28 of the items. This was 51% of the total items.

The number of preference measures which were significantly related to variation in predispositions was not a high proportion of the total items. In this research, however, the approach was to explore variation in environmental perceptions in exploratory research and test interpretations in this methodological study. Consequently, many preference measures were used with varying degrees of confidence in their validity. This analysis narrowed the preference measures to those which were salient to predispositions.

There were five dimensions for which at least two measures of relationships were not significantly related to predispositions. These were eliminated from further consideration. Measures of preferences for intimacy and motivation represented two of the dimensions. The remaining three dimensions were penetrance, manning, and routine. Measures of preferences along these dimensions implied also preferences for adaptive demands, which were defined in Chapter III as involvement (penetrance), number of functions (manning), and work load (manning and routine). In view of the findings that preferences along these dimensions were consistently not related to predispositions, the results suggested that these items were perceived as measures of preferences for adaptive demands. As stated in Chapter III, the effect of adaptive demands have been conceived not to vary with predispositions.

Construct Validity of Measures

The working hypothesis developed in exploratory research predicted the relationships of choice of preference for environmental conditions to predispositions. The direction of relationships between the measure of Dominant predispositions and the statements ordered from control to support was thus a measure of the trend of association between predispositions and preferences.

Of the 28 items which were significantly related to predispositions, the relationships were in the expected direction for 22 out of the 28 items. This was 79% of the salient items. This suggests that these measures were appropriate in terms of discriminating relationships of predisposition to preferences, implying that the concepts on which they were based had validity.

Analysis of the items for which predictions were invalid indicates three types of error. First, the relationships of predispositions to preferences for respect and for affection were the opposite of the predicted ones, both for work and home environments. Second, predictions for one measure of preference for territorial social integration was incorrect because the dimensions of territoriality were not appropriately defined and distinguished. While this conceptual problem resulted in only one invalid prediction, inappropriate definition of dimensions appears to have resulted in imprecise measures that may have weakened relationships to predispositions which otherwise might have proven significant or stronger. Third, the relationship of three measures of home environment preferences to predispositions were inconsistent with the relationship found for measures along the same dimensions in work environments and with predictions. The findings for these three measures implied Subordinate and Dominant predispositions were related to different preferences for home environments than those for work environments. In summary, item analysis indicated that the facilitative functions of respect and affection, and relationships between work and home were not understood, and that greater conceptual refinement of territorial measures were needed.

Construct Validity by Dimension

Inspections of intercorrelations and cluster analyses indicated that few measures were highly intercorrelated with one another. Each item was conceived to measure preferences along separate dimensions of the environment. The results thus were interpreted to indicate that the facilitative dimensions implied by salient measures were separate and distinct from one another. The exceptions to this general finding were two pairs of measures of preferences for attributes of social control at work, which were the two most highly convergent items. The strength of relationships between the two items in each cluster were moderate. Content of each item suggests that convergence in response was related to similar attitudes about hierarchical authority.

The preferences which were significantly related to predispositions were assumed to indicate dimensions which facilitate personal control or social support, depending on relationships to predispositions. The dimensions for which at least one measure of preference was significantly related to predispositions are listed in Table 4-4, including those for which working hypotheses were false. These represent dimensions for which measures discriminated preferences by predispositions. In some cases, this relationship was established by one measure of preference; in other cases, two or three measures of preferences were consistently and significantly related to predispositions.

There were 19 dimensions which were conceived to be represented by the 28 measures of preferences that were significantly related to predispositions. As previously indicated, 22 of these 28 measures, or 79%, were significantly related to predispositions in expected directions. There were 39 measures of preferences conceived to fall along these 19 dimensions. Thus, 28 out of 39 (72%) of the preference measures along these 19 dimensions were significantly related to predispositions, not including one item (34) which had questionable distributions. Of the 28 salient measures, 12 were related to predispositions at .05 or less level of significance. The foregoing is, however, based on the two-tailed test of significance used in all the data reported in this chapter. A one-tailed test is appropriate for assessing the validity of hypotheses in which the directions of relationships were specified. By this criterion, 28 measures were salient at the .10 level of probability, and 16 of these measures were significantly related to predisposition measures at the .05 level or less.

These data indicate that the concept that environmental preferences vary by these behavioral predispositions has validity and that these dimensions are useful in isolating preferences. These data also in-

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Table 4-4

Facilitative Dimension for Which Preferred Conditions Vary by Predisposition

Factors Dimensions	Item by Environment	Statistics		Working Hypothesis	
		Pr	s*	Direction?	Validity?
Participation					
Attendance	(16) Home	.18	.05	Consistent	True
	(49) Work	.13	.24	Inconsistent	--
Schedule	(17) Home	.11	.24	Consistent	--
	(50) Work	.39	.01	Consistent	True
Membership status	(18) Home	.16	.18	Consistent	True
	(52) Work	.04	.40	--	--
Function					
Organization	(25) Home	.27	.03	Inconsistent	False
	(58) Work	.36	.05	Consistent	True
Spatial relations	(23) Home	.01	.47	--	--
	(56) Work	.17	.16	Consistent	True
Facility relations	(24) Home	.26	.04	Consistent	True
	(57) Work	.08	.33	--	--
Pace	(22) Home	.03	.42	--	--
	(55) Work	.19	.15	Consistent	True
Territoriality					
Homogeneity	(26) Home	.19	.10	Consistent	True
	(27) Home	.15	.16	Consistent	True
	(59) Work	.17	.17	Consistent	True
Possession	(29) Home	.26	.04	Consistent	True
	(62) Work	.08	.35	--	--
Social separation	(36) Home	.35	.001	Consistent	True
	(60) Work	.15	.20	Consistent	True
Social integration	(28) Home	.02	.46	--	--
	(61) Work	.20	.13	Inconsistent	False
Social Control					
Direction	(33) Home	.20	.11	Consistent	True
	(67) Work	.17	.17	Consistent	True
Hierarchy	(39) Home	.20	.12	Inconsistent	False
	(64) Work	.28	.05	Consistent	True
Reinforcement	**(34) Home	(.13)	(.19)	(Consistent)	(--)
	(68) Work	.28	.08	Consistent	True
Structure	(40) Home	.24	.06	Consistent	True
	(69) Work	.30	.04	Consistent	True
Status	(35) Home	.03	.43	--	--
	(70) Work	.16	.04	Consistent	True
Social Change					
Communication to authority	(42) Home	.25	.05	Consistent	True
	(73) Work	.23	.10	Consistent	True
Functional autonomy	(41) Home	.52	.001	Inconsistent	False
	(74) Work	.01	.48	--	--
Esteem	(31) Home	.13	.19	Inconsistent	False
	(71) Work	.15	.20	Inconsistent	False

* Significance levels for comparable strengths of correlations vary because the number of responses about work environments (35) were less than the number for home environments (51).

** Item is not considered a valid measure because of extreme distributions.

dicate that concepts and measures of attributes which are related to social support and to personal control require additional refinement, although the concepts have demonstrated validity in discriminanting preferences.

The next question examined was whether the concept that both home and work environments can be defined by the same dimensions had construct validity. One criterion of validity was whether the same dimensions were significantly related to predispositions in both work and home environments. Measures of preferences for both work and home environments were significantly related to predispositions along 9 of these 19 discriminant dimensions. This suggests that the facilitative aspects of both work and home environments may be similar and appropriately conceptualized in terms of these 9 dimensions. Directions of relationship of environment-specific measures of the same attributes were, however, inconsistent for 2 of the 9 dimensions. This suggests that home and work environments may serve somewhat different functions in facilitating personal control and social support, but not consistently different functions.

Table 4-4 also reports preference measures which had non-significant relationships to predispositions for dimensions, but which were significantly related to predispositions by one measure. Of the 31 relationships assessed, 25 were consistent with the direction expected in the working hypothesis. By the criterion of consistency, this implied that the concept of common dimensions for work and home environments had considerable construct validity. The finding supports the previous interpretation that both home and work environments are similarly related to personal control and social support.

Several of the working hypotheses had predicted different directions of relationships to those which were obtained. Where the relationship was significant, the working hypothesis was considered to be false. Where the relationship was not significant, no judgment was made as to truth or falsity of the hypothesis. The present manner of reporting is used because the research was not designed to test hypotheses, but rather to be a means of selecting the best concepts and measures of facilitative dimensions for future substantive research. It was considered to be inadvisable to reject any further consideration of possible facilitative attributes of environment on the basis of one measurement of the relationship which was not significant when the other measurement of the same relationship had been predictively validated.

Facilitative Systems

The content of the preference items implied that sets of measures represent components of common environmental phenomena. Cluster analysis, however, indicated that these sets of measures were not perceived by respondents in a consistent manner so as to suggest a basic attitude. This finding was consistent with the assumptions of the research. The conceptual model for the research did not assume that common attitudes determine evaluations of environments; instead, the conceptual scheme implied that environmental preferences were a direct function of common behavioral predispositions. Moreover, although the investigators could perceive that sets of dimensions were related to common phenomena such as territoriality and social control, these were abstract concepts that were learned through advanced education and that were apparent only after considerable study of the items. Few, if any, respondents in this sample had equivalent training and the items were presented to them briefly in scrambled order. The results of cluster analysis, therefore, suggested that most respondents did not have these *a priori* attitudes which systematically organized their environmental preferences.

Evidence that facilitative dimensions were relatively independent variables was consistent with the interpretation that the facilitative dimensions formed elements of systems. The concept of systems implied that sets of dimensions performed common facilitative functions, but environmental systems are objective phenomena which exist and function independently of the subjective perceptions of individuals. This resulted in the identification of four systems which appeared to best define the conceptual relationships among salient preferences. (See Table 4-5)

Hierarchical System. This system was defined by the dimensions which were originally conceived to compose the social control factor, with the additional dimension of communication to authority. It was evident that communication to authority is logically related to a system

Table 4-5

Classification of Dimensions by Facilitative Systems

Systems Dimensions	Facilitative Attributes for	Relations to Items*	
	Personal Control vs. Social Support	Direct Measures	Related Measures
Hierarchical System			
Direction	Self-direction vs. direction by others	33*,67*	
Organization	Flat vs. tall organization	39*,64*	73*,67*, 69*
Reinforcement	Self-defined vs. strict, consistent	(34),68*	
Structure	Flexible, loose vs. rigid, clear	40*,69*	70*
Vertical communication	Much vs. little communication	42*,73*	
Territorial System			
Group homogeneity	Few collaborators with same interests vs. group with same values	26*,27* 59*	
Possession	Control of use vs. personal markings	29*,56*	
Social separation	Low vs. high separation outsiders	36*,61*	
Territorial range	Large, inclusive vs. small, exclusive	36*,60*	24*
Functional System			
Role	Differentiated vs. undifferentiated	58*	25*
Spatial status	Self-defined vs. shared	56*	29*
Social status	Self-defined vs. defined by others	18*,70	
Time System			
Schedule	Self-defined, flexible vs. fixed others, stable	50*,17	55*
Attendance	Self-regulated vs. other regulated	16*	49*
Pace	Variable faster vs. steadily slower		

*Items which are significantly related to predispositions at .20 level or less designated with asterisks (*).

( ) Items with unacceptable distributions.

of social control by hierarchical authority. The concept of control by hierarchical authority had been implicit in the original idea of social control, but detailed analysis of the discriminant preference measures indicated that this was a system of control of behavior by hierarchical social organizations. The resulting patterns of empirical relationships were coherent. Dominant predispositions were related to discriminant preferences for self-direction, flat organizational hierarchy, self-defined contingencies of reinforcement, flexible and loose structure and much communication to authority. Subordinate predispositions were related to contrasting preferences for direction by others, tall hierarchical organization, strict and consistent contingencies of reinforcement, and little communication to hierarchical authority. The exception to this general pattern of conceptually consistent preferences by predisposition was the preference of Subordinate persons for flat hierarchical organization in their neighborhood, which will be discussed subsequently.

Territorial System. The idea of territoriality as a system of social control has been developed by Suttles (1972). Territoriality was conceived by Suttles as a form of informal social control which develops in response to inability of formal social organizations to control behavior in urban neighborhoods. If the term "hierarchical" organization is substituted for formal organization, it is clear that territoriality may be conceived as an organization of space, and hierarchy as an organization of authority, for social control of behavior.

Measures of territorial preferences, however, were conceptually difficult to distinguish from some measures which were intended to measure functional preferences. Each of these items therefore inspected for distributions of responses by persons with each predisposition and grouped according to their conceptual relations. The distributions of responses for persons with Dominant predispositions (Table 4-6) indicated a strikingly consistent pattern of strong preferences with regard to social homogeneity in proximal environments, high social contact with persons outside proximal environments and from distal environments, and large territorial ranges including strangers across work and home environments. Dominant persons also preferred home ownership (item 29) and space for own activities at work (item 56), which

Table 4-6

Preferences in Territorial-Related Items Selected by Persons with Dominant Predispositions

Item	Comparison of Preferred Statement with Paired Statement	Inferred Territorial Preference
29	Ds selected owning own home (56%) over personal decoration and arrangement (44%) as important to feeling at home.	Possession by control over use of homeplace
56	Ds selected space for own work activities (61%) over space with people coming and going (44%).	Personal space for own activities in workplace
26	Ds enjoyed seeing one or two people at home who are interested in doing the same things (62%) over group of people at home who feel the same way about things (38%).	Homogeneity in homeplace based on collaborators with same personal interests
59	Ds found that they liked to work closely with one or two people who want to accomplish the same things (83%) over a group of people who feel the same way about things (17%).	Homogeneity in workplace based on collaborators with same personal interests
36	Ds preferred neighbors who are glad to see you and interested in what you are doing (85%) over pleasant and polite neighbors who mind their own business (15%).	High social contact with persons in the distal environment and outside the functional unit at home
61	Ds preferred visitors dropping by to see them at work (71%) over people not walking into the place they work without an invitation (27%).	High social contact with persons in the distal environment and outside the functional unit at work
24	Ds preferred to be near a large shopping center where they can get everything they need (88%) over a small store where they know people and can get most things they need (12%).	Large territorial range including strangers (persons outside the distal environment of home)
60	Ds wish for more contact with new people at work (65%) over working with a small group of people in one place (35%).	Large territorial range including strangers at work
41	Ds agreed that people should avoid doing things to their property that neighbors dislike (73%) over doing what they want with property even if neighbors dislike it (27%).	High control over behavior by neighborhood territorial system

were conceptually consistent with one another; however, item 56 was designed to measure preferences for functional spatial relations (space fits function) and item 29 was intended to measure preferences for a sense of possession (important to feeling at home). The equivalent measure of functional spatial preference at home (item 23) was modifed in pretesting in a manner which suggested that home preference was not adequately tested. In view of the evidence from exploratory interviews that Dominant persons prefer functional space, as well as Dominant responses to item 29, the conclusion was reached that functional space was a valid dimension and separable from other territorial measures.

The distribution of responses to these same preference measures for Subordinate persons contrasted sharply with those for persons with Dominant predispositions. (See Table 4-7) The most remarkable difference was the general pattern of indifference to degree of social contact with persons outside the proximal environment and to the extent of territorial range. The distributions for item 24 were ambiguous in this respect: while clearly Subordinate persons were less consistently in favor of the large shopping center measure of territorial range than Dominant persons, they nevertheless preferred this indicator of preference for large, inclusive territorial ranges over the paired statement which implied preference for a small, exclusive territorial range. Item 24, however, was originally intended to measure preference for functional facility relations and seemed to be an imperfect measure of territorial range preference for two reasons. First, it was biased because the large shopping center was described as more efficient to perform shopping functions (everything can be gotten in one place); second, it failed to describe the large shopping center as outside the neighborhood and as a place where one was not known personally. For these reasons, and because responses to items 36, 59, and 60 consistently indicate a preference for large territorial range, it is believed that the significant response differences between Dominant and Subordinate persons to item 24 indicated a preference by Subordinate respondents for a small, exclusive territorial range.

The other inconsistency in territorial preferences of persons with Subordinate predispositions was that they preferred collaborators at work in contrast with an homogeneous group at home (item 59). This was

Table 4-7

Preferences in Territorial-Related Items Selected
by Persons with Subordinate Predispositions

Item	Comparison of Preferred Statement with Paired Statement	Inferred Territorial Preference
29	Ss selected personal decoration and arrangement (70%) over owning own space (30%) as important to feeling at home.	Possession by personal markings of homeplace
56	Ss selected place where people are always coming and going (56%) over own space for activities at work (46%).	Shared space for activities in workplace
26	Ss enjoyed seeing group of people at home who feel the same way about things (58%) over one or two people interested in doing the same things (42%).	Homogeneity in homeplace based on presence of group with same values
59	Ss found that they liked to work closely with one or two people who want to accomplish the same things (69%) over a group of people who feel the same way about things (31%). (Ds preferred same statement 83% to 17%).	(Home and work preferences inconsistent) Homogeneity in workplace based on collaborators with same personal interests
36	Ss indifferent between neighbors who are glad to see you and interested in what you are doing (48%) against neighbors who are pleasant and polite and mind their own business (52%).	Social contact with persons outside functional units not salient at home
61	Ss indifferent between visitors dropping by at work to see them (50%) and people not walking in without an invitation (50%).	Social contact with persons outside functional unit not salient at work
24	Ss preferred to be near a large shopping center where they can get everything they need (67%) over a small store where they know people and can get most things they need. (Ds preferred the same statement 88% to 12%).	Large territorial range including strangers
60	Ss indifferent between preferring to work with small group in one place (50%) and having contact with new people at work (50%).	(Home and work preferences inconsistent) Territorial range not salient
41	Ss believed that people should do what they want with their property even if their neighbors dislike it (80%) over avoiding doing things to property that neighbors dislike (20%).	Low control over behavior by neighborhood territorial system

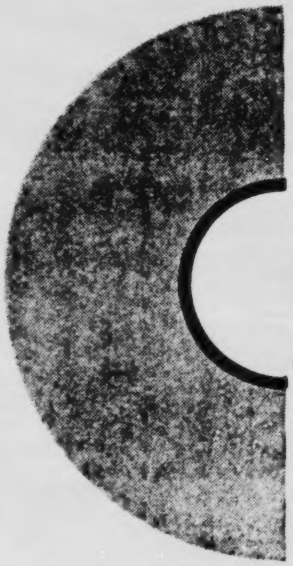
interpreted in the light of the preferences of this group for undifferentiated functional roles at work, in which they work together with other people (item 58). It is suggested that Subordinate respondents evaluated alternative statements in item 59 in terms of the need for cooperation from co-workers, and, therefore, preferred to work with people who "want to accomplish the same things;" however, as Dominant persons preferred the same statement significantly more often than Subordinate persons, it is assumed that they prefer to "work closely with one or two persons" as well as persons who "want to accomplish the same things."

The foregoing patterns of response differences between the two groups of subjects suggest that their territorial preferences systematically and consistently differed from one another for both work and home environments. In the home environment, however, responses to items 29 and 41 indicated preferences which were not manifested at work. Dominant respondents preferred home ownership and believed people should avoid doing things to their property that neighbors dislike; Subordinate persons preferred arranging and decorating their home and believed that people should be able to do anything they want to their property, even if neighbors dislike it. As comparable preferences were not evident for work environments, these responses suggest differences in adaptations to work and home environments. With these exceptions and omitting functional space measures, the preferences in Table 4-5 appeared to define facilitative territorial dimensions. The patterns of territorial preferences for home and work environments are graphically represented in Figures 4-1 and 4-2.

Functional System. Given the concepts of hierarchical and territorial dimensions as components of social control systems, it became clear that certain salient preferences defined relationships to these authority and spatial systems in the performance of work and home functions. This implied a definition of function which is consistent with the idea of function in structural-functional theory. In this perspective, social status was recognized as a dimension which defines relationships of individuals to authority in defining duties. Differences in preferences for self-defined responsibilities and respon-

Figure 4-1

HOME TERRITORIAL PREFERENCES



DOMINANT PATTERN

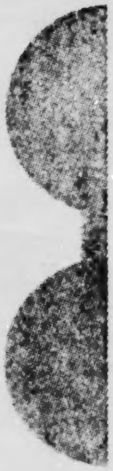
DISTAL

High social contact with neighbors
Large territorial range
Range including strangers

PROXIMAL

Control of Boundaries
Own homeplace
Activities with one or two collaborators

High control over use of homeplace by neighborhood territorial system



SUBORDINATE PATTERN

DISTAL

Satellite settings with familiar people (small stores and relatives)

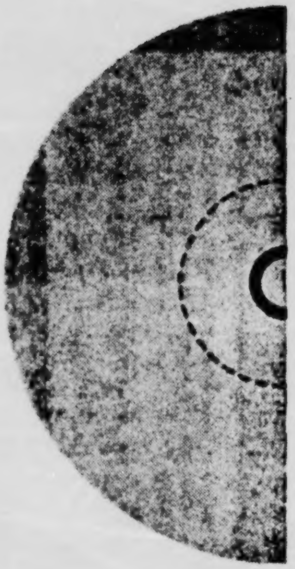
PROXIMAL

Personal marking of homeplace
Presence of group with same values
Lack control over boundaries

Low control over use of homeplace by neighborhood territorial system.

Figure 4-2

WORK TERRITORIAL PREFERENCES



DOMINANT PATTERN

DISTAL

High social contact with outsiders
Large territorial range
Territorial range including strangers

PROXIMAL

PERSONAL
Space for own activities

SUBORDINATE PATTERN

PROXIMAL

Place where people are always coming and going
Groups of people who cooperate

sibilities defined by others (items 18 and 70) were conceived to be effects of behavioral predispositions on preferences for social relationships with systems of authority. Functional spatial relations, as measured by item 56, appears to serve an equivalent territorial function to the social status. This was designated spatial status to indicate its equivalency to social status. Spatial status defines relationships to spatial systems. Individuals have self-defined space, allowing them to determine how space is used (preferred by Dominant persons), or a space shared with others, in which spatial groups determine how space is used (preferred by Subordinate persons). As indicated by responses to item 29, home ownership is preferred by Dominant persons, suggesting it may represent the equivalent preference at home, to item 56 serving the function in controlling proximal space; however, the equivalent home preference for Subordinate persons is indicated by their responses to item 26. (See Table 4-7)

These responses suggest that individuals learn that self-defined status facilitates personal control and that other-defined status facilitates social support. Preference for own self-defined space is conceived to be an effect of learning that this facilitates personal control, while preference for group space is postulated to be an effect of learning that this relationship facilitates social support. Both the dimensions of social status and of spatial status are conceived to facilitate the integration of individual behavior with social control systems.

Social status and spatial status preferences appear to be logically interrelated with preferences for functional roles. Undifferentiated (work with others) functional roles would appear to be facilitated by prescribed statuses in which responsibilities are defined by others and space shared with others. Working independently, or differentiated functional role performance, would appear to be facilitated by self-defined status and space which fits activities of self; both are assumed to facilitate the organization of relations with others in the performance of functions, or functional roles. These preferences were directly indicated by findings of work-role preferences (item 58), but not by the measure of home preference (item 25).

Time System. Findings for preference measures for pace, attendance, and schedule dimensions suggest that participation in different functional environments is regulated by time systems. Preference for attendance as measured by item 16 suggested that Subordinate persons have little capacity to regulate the amount of time that they participate in home environments, with resulting desire to spend more time outside the home. This was expected from exploratory research, but the findings for the nearly significant measure for attendance in work environments (item 49) suggested that the appropriate interpretation of this finding is that they have little capacity for personal regulation of the amount of time which they participate in environments. Responses to item 49 indicated that they would keep working indefinitely if they did not have to go home. Responses to item 55 indicate that they have to work faster than they like. Responses to item 50, and the nearly significant responses to item 17, also showed that Subordinate respondents preferred schedules to be fixed by others. In contrast, Dominant respondents indicated that they preferred to plan their own schedules in responses to item 50 and preferred to determine their own times to participate in both work and home functions. Responses to items 16 and 49 also indicated that Dominants resisted fixed schedules of attendance at work and felt that they should spend more time at home, possibly because they felt compelled to attend work. These data suggest different preferences for allocation of time for participation in functional environments, as indicated in Table 4-5.

Work-Home Adaptations

The foregoing item analyses suggested that responses to most preference measures that were significantly related to predispositions were consistent with the interpretations that hierarchical, territorial, functional and time systems have similar facilitative relations to behavior in both work and home environments. The remaining patterns of responses to preference measures were interpreted to indicate differences in adaptations to work and home environments.

Contrary to working hypotheses, it was found that Subordinate persons preferred respect over affection in both work and home environments (items 71 and 31). Responses to a discarded preference item in this research also indicated that 100% of the respondents preferred "independence" to "dependence." On this basis, it was inferred that Subordinate respondents preferred respect to affection because of damage to self-respect resulting from conditions at work. According to the working hypotheses for this research, Subordinate individuals seek social support, but according to the findings of both exploratory research and this replication study, they want direction to obtain support, with the result that they have dependent relations at work. On this basis, it was further inferred that certain responses of this group to home preference measures which were inconsistent with work preference responses are explained by an adaptation in which privacy at home is used in reaction to effects of dependency at work on self-respect. Thus, Subordinate respondents preferred doing household chores alone at home (in contrast to working with a group at work), they preferred flat neighborhood hierarchical organization and handling neighborhood problems without help from persons with influence (in contrast to tall hierarchy and much direction at work), and believed that people should be able to do anything they want to their property, even if neighbors dislike it (in contrast with a dependent relation with others at work). The relations of these items (25, 39, and 41) to Subordinate predispositions were particularly strong and significant.

In contrast, Dominant persons preferred affection to respect in both work and home environments, which was also contrary to working hypotheses. This also appeared to be a work-home adaptation. According to the findings of the research reported in this chapter, Dominant predispositions are related to strong preferences for high social contact, large territorial range, and meeting strangers, both at work and at home; however, Dominant preferences are also related to preferences for functional spatial and social relations which require independent, self-reliant behavior in the performance of functionally differential roles of work. It was, therefore, inferred that conditions which facilitate personal control at work results in insulation from personal friendships at work and results in adaptations at home in which Dominant persons compensate for this deprivation by seeking affiliation with others. This is indicated by responses to item 25 (preferring to do household chores with others), and item 41 (believing that people should avoid doing things to their property that their neighbors dislike). The responses to these items implied that Dominant persons preferred very different relations to household members and to neighbors at home than the independent and self-reliant relation with co-workers at work.

In both cases, therefore, it appears that contrasting territorial preferences at home (privacy and affiliation) are adaptations which may develop from relations to authority at work that Subordinate and Dominant persons prefer, presumedly to obtain social support or personal control. In each case, it appears that environments which facilitate social support and personal control at work conflict with personal needs for self-respect and affection and engender contrasting adaptations at home.

Cluster Analysis

This interpretation is consistent with the results of cluster analysis. Two cluster analyses were carried out. The first analysis was limited to identifying the items which were highly significantly related ($p = .01$ or less) to measures of contrasting preferences. These were 11 items for which response distributions indicated that a majority of each group of respondents, classified by predispositions, preferred contrasting environmental conditions. (See Appendix C, Table C-1)

The clusters identified by this analysis (Appendix C, Figure C-1) indicated that the central items were related to both territorial and hierarchical items, and each cluster, with one exception (cluster 5), consisted of items measuring preferences for both home and work relations. This suggests that home and work preferences were interrelated.

The next step was to analyze the content of the clusters to determine consistency of clusters with the previously-described concept of adaptations. (The items constituting each cluster are presented in Appendix C, Table C-2). This resulted in the following interpretations of clusters:

Cluster	Preferred Adaptations	Preferred Adaptations
1. Self-Expression	More time outside home, in reaction to high control by authority, facilitated by personalized territory at work.	More time at home, and away from need to control spatial relations, facilitated by expression of personal needs at home.
2. Homeplace Privacy	Privacy in household work because I have so little independence and control at work.	Affiliation in household work because I work independently in a place where I disagree with things.
3. Functional Integration	Integration with work facilitated by achieved status and personal space and by shared interests and self-direction at home.	Integration with work facilitated by prescribed social status and shared values and other direction at home.
4. Neighborhood Privacy	Affiliation with neighbors in terms of common goals and self-regulation and planning.	Privacy in homeplace against interference by neighbors.
5. Territorial Deprivation	Work would be facilitated by clear hierarchical structure of authority and privacy.	Work would be facilitated by flat hierarchical structure of authority and affiliation.
6. Esteem Needs	Differentiated work role facilitated by affection at work and my own familiar place where I am liked.	Undifferentiated work role facilitated by respect at work and a personalized home where people respect me and I can try new things.

Clusters 1 and 2 suggest contrasting adaptations are related to individual experiences. In cluster 1, self-expression is sought outside of the home, in possible reactions to hierarchical authority, in the form of personalized space, and self-expression is preferred inside the home, in possible reaction to hierarchical authority at work, in the form of doing what one wants. In cluster 2, desire to do household chores alone (privacy) or with others (affiliation) appears to be related to social control over behavior and independent behavior at work respectively. Cluster 3 suggests that functional integration at work in terms of status and role relations to hierarchical and territorial systems may be facilitated by supportive personal relations at home. Cluster 4 implies that different attitudes about neighborhood control over use of property are both related to variation in preferred degree of social contact with neighbors and differences in the degree of self-control over allocation of time for work and home. This cluster suggests that there is a relation between the degree to which individuals control their participation in work environments and preferences for affiliation and privacy. In the clusters 5 and 6, direct substantiation is provided for the previous interpretations of adaptations. In cluster 5, it is apparent that favoring much direction and structure is related to wanting privacy at work, while preferences for a high degree of self-determination of activities at work is related to wanting social contacts and affiliations at work. In cluster 6, desire for respect and affection are related to differentiated and undifferentiated work roles repsectively.

A second cluster analysis was carried out, restricted to only discriminant items, and deriving clusters by methods designed to separate items by degree of relationships. The results were not significantly different than the first analysis.

The next procedure was to determine the relationships of the first set of clusters to predispositions, with and without controls. The results are reported in Table 4-8. Only age was found to significantly affect relationships to predispositions, generally strengthening the relationships. The relationships for clusters 1 and 2 were not significant. The content of the items imply that these clusters were affected by situational factors which varied with individual circumstances. The other clusters were significantly related to predispositions as would be expected from the previous interpretations of adaptations.

Salience of Facilitative Systems

Variation in the degree to which respondents prefer contrasting environmental conditions defined relative preferences for these attributes. The degree to which these attributes are preferred defines, however, the salience of attributes to predispositions and their functions in facilitating personal control and social support. The next procedure was analysis of the distribution of responses to measures to determine salience of system attributes to predispositions and the facilitative functions of systems. The results are summarized in Tables 4-9 and 4-10.

Table 4-8

Correlations of Contrasting Preference Clusters with Dominant Predispositions, With or Without Control for Age

Cluster: Number and Label	Pearson's r	
	Zero Order	Control for Age
1. Place Regulation	-.20	-.22
2. Homeplace Privacy and Affiliation	-.07	.03
3. Work Statuses	.31*	.42**
4. Neighborhood Privacy and Affiliation	.38**	.35*
5. Work Structure	-.39**	-.48***
6. Work Role and Esteem	-.40**	-.48***

* $p \le .05$
** $p \le .01$
*** $p \le .001$

Table 4-9

Distribution of Responses to Measures of Environmental Conditions Preferred More Frequently by Dominants than Subordinates

Systems Class	Environmental Conditions Preferred by Dominant Respondents	Items by % Selected by Dominant: Consistent Distributions				Inconsistent Distributions
		80% or more	79% to 70%	69% to 60%	59% to 50%	Less than 49%
Hi	Self-direction	67(W)		33(H)		
Hi	Flat hierarchy		39(H), 64(W)			
Hi	Self-defined contingencies	69(W)				
Hi	Flexible, loose structure			68(W)		40(H) 48%
Hi	Much vertical communication		73(W)			42(H) 31%
Fu	Self-defined duties			70(W), 18(H)		
Fu	Differentiated role				58(W)	
Fu	Self-defined space		56(W), 29(H)			
Ter.	Control use of space		56(W), 29(H)			
Ter.	Group same interest	59(W)		26(H)		27(H) 16%
Ter.	Large territorial range	24(H)* 36(H)*	60(W)*			
Ter.	Low social separation	24(H)* 36(H)	60(W)			
Ter.	High territorial integration		41(H) 61(W)			
Ti	Self-defined, flexible schedule			50(W-H)		
Ti	Self-regulated attendance				16(W-h)	
Ti	Variable, faster pace			55(W)		
Ad.	Need for affection	31(H)				71(W) 17%
Ad.	Need for affiliation		41(H)*		25(H)*	

*Item is an indirect indicator of preference, primarily related to a different dimension.

Table 4-10

Distribution of Responses to Measures of Environmental Conditions Preferred More Frequently by Subordinates than Dominants

Systems Class	Environmental Conditions Preferred by Subordinate Respondents	Items by % Selected by Subordinates: Consistent Distributions				Inconsistent Distributions
		80% or more	79% to 70%	69% to 60%	59% to 50%	Less than 49%
Hi	Other direction				33(H)	67(W) 33%
Hi	Tall hierarchy	64(W)				
Hi	Strict clear contingencies					69(W) 44%
Hi	Rigid, tight structure		40(H)	68(W)		
Hi	Little vertical communication	42(H)			73(W)	
Fu	Duties defined by others			70(W)		18(H) 47%
Fu	Undifferentiated role			58(W)		
Fu	Space shared with others				56(W), 26(H)* 61(W)*	
Ter.	Personal markings		29(H)			
Ter.	Group with same values	27(H)			26(H)	59(W) 33%
Ter.	Small, exclusive territory				36(H)* 60(W)*	24(H)* 33%
Ter.	High social separation				36(H), 60(W)	
Ter.	Low territorial integration	41(H)			61(W)	
Ti	Other defined, stable schedules	50(W-H)				
Ti	Other regulated attendance	16(W-H)				
Ti	Stable, slower pace					55*(W)
Ad	Need for respect	71(W)				31(H) 32%
Ad	Need for privacy	41(H)*	39(H)* 25(H)*			

*Item is an indirect indicator of preference, primarily related to a different dimension.

Distribution of responses by persons with Dominant predispositions, shown in Table 4-9, indicated that these respondents positively, and often strongly, preferred environmental conditions that they more frequently selected than persons with Subordinate predispositions. This finding is consistent with impressions formed in exploratory research interviews that Dominant persons had clear and more definite preferences for environmental conditions.

As indicated by Table 4-10, distributions of responses by persons with Subordinate predispositions indicated considerable inconsistency between home and work measures and between negative preferences and positive preferences for environmental conditions. The findings of exploratory research that persons predisposed to seek social support tend to have vague and unclear preferences may partly explain these distributions. In addition, laboratory research with students indicated that observed support-seeking behavior was positively and highly significantly related to measures of predispositions to Conformity, which implies that responses might be influenced by need to conform to social norms and even to preferences of Dominants. The factors may reduce expression of personal preferences.

Facilitative Attributes of Hierarchical Systems. Distributions of responses by Dominant persons to hierarchical preference measures were generally consistent with the interpretation that these individuals positively preferred the environmental attributes indicated by relative preferences. The exceptions were items 42 and 40, in which measurement errors appear to have occurred. Item 42 measured preference for vertical communication by frequent or little contact with elected officials at home, and it is possible that negative attitudes about politicians in general may have reduced percentage choice of frequent personal contact with them at home. Item 40 defined structure in terms of conditions of coordination or lack of coordination of household activities. The latter was probably a too extreme measure of loose, flexible structure.

Distributions of Subordinate responses to items 67 and 69, other direction and reinforcement, were contaminated by language implying lack of independence and self-reliance. In responses to other questions, which did not imply dependence, it was nevertheless clear that these individuals preferred rigid, clear structures provided by rules and a clear organization of hierarchical authority at work. There is, however, a distinction between undignified conditions of direction and reinforcement, which denigrates self-respect by implying dependence, and the provision of social support by direction by others and reinforcement. The language of verbal questions such as items 67 and 69 implied the former conditions.

Frequency of responses to item 42 implied that the Subordinate group consistently preferred little communication with hierarchical authority; however, responses by this group would be expected to be affected more by conventional social norms with regard to elected officials than those of Dominant persons. It is probable that vertical communication is not salient to social support as indicated by responses to item 73 and by response distributions to social separation measures which involve horizontal communication.

Facilitative Attributes of Territorial Systems. The general pattern of distributions of responses for persons with Dominant predispositions to territorial preference measures differs sharply from the distributions for Subordinate persons. As a group, Dominant persons displayed remarkably consistent and positive preferences for environmental conditions which they preferred more frequently than the Subordinate group. Item 27 was the exception, but both groups strongly preferred the same conditions of homogeneity in family background with spouse. Item 27 was disregarded as an inappropriate measure of the same preference measured better by item 26.

The general pattern of distributions of responses by the Subordinate group implied virtual indifference to choices among territorial conditions, indicating that most of territorial dimensions were not salient to facilitating social support. Items 24 and 59 did not quite fit this pattern. Analysis of the contents of these items, reported in a previous section, suggested that these deviations from the general pattern may be explained by measurement error.

The exceptions to this general pattern of indifference to territorial dimensions for the Subordinate group were items 26, 27, 29, and 41. Responses to item 29 indicates that this group positively agreed that ability to personally decorate and arrange their homeplace made them feel at home. While the preference in item 27 was also strongly preferred, it is considered a poor measure of preference; however, item 26 tends to validate the relationship. In response to item 26, 58% of the Subordinate respondents preferred being around people who feel the same way about things at home. These preferences suggest desire for a private and personalized physical and social environment. This appears to be related to responses to item 41, indicating that Subordinate persons rejected any restriction from neighbors on their freedom to use their property. This response is comprehensible in terms of the interpretation that control over their activities by neighbors represents interference with adaptive, highly personal and private relationship to their homeplace. This suggests low integration with neighborhood systems of territorial social control may be related to compensatory adaptations. In contrast, the responses of the Dominant group to item 41 imply that their behavior is highly integrated with territorial systems in home environments.

Responses to items 41 and 56 indicate that Dominant predispositions are related to belief in mutual obligations to respect possession of territory. This implies an orientation to territoriality as a system of social control. However, while item 56 emphasizes personal space for activities, item 41 indicates receptivity to neighborhood social control. These differences were interpreted to indicate that territorial integration at work is sacrificed for hierarchical integration; but, at home, territorial affiliation is adaptive. In both environments, personal control over homeplace and workplace are preferred as well as large, inclusive territorial range and low social separation.

Facilitative Attributes of Functional Systems. As in the case of previous facilitative systems, the distributions of responses of Dominant persons to functional preference measures were generally consistent across environments and with preferences indicated by relative frequency of choice. The exception was item 18, which may have been affected by privacy needs.

Facilitative Attributes of Time Systems. The distributions of responses to measures of preference for time relations by Dominant persons were generally consistent with the environmental preferences inferred from relative frequency of choices among paired attributes.

Facilitative Attributes of Adaptive Systems. The distributions for these measures were generally consistent with high degree of salience and facilitation. The exception was item 71: 83% of these respondents selected the paired statement indicating preference for being respected for abilities at work. The extreme distributions of responses to this item for both groups of respondents, with 93% of Subordinate respondents also preferring this item, indicated that the social norm is to expect respect at work. Conversely, the social norm at home is to expect affection, as indicated by agreement of 80% of Dominant respondents and 68% of Subordinate respondents with this preference measure in item 31. Thus, responses to esteem items were generally biased toward preferring affection at home and respect at work, regardless of predisposition. This was interpreted to indicate that there was general concensus and high expectation by most respondents that conditions of work should enhance respect and that conditions at home should provide affection.

This differentiation in esteem levels expected by environment is, of course, to be expected from sociological theory and data with regard to expressive and instrumental functions. Nevertheless, significant differences in relative preferences for affection and esteem did exist in this sample, and given this uniformity of social norms and functions by environment, these differences are probably understated. The interpretation which best fits the data is that similar preferences stem from social norms and expectations with regard to work and home life; however, needs for affection and respect vary as a function of deprivations from relations which facilitate social support and personal control.

Measures of Facilitative Attributes

On the basis of the foregoing analysis, objectively-defined, measurable attributes, and their relationships to facilitating personal control and social support, were identified. These are reported in Table 4-11. Further modifications were made in concepts of facilitative attributes. Facilitative attributes of hierarchical systems were defined more specifically to avoid defining conditions in a manner which would unnecessarily diminish self-esteem. Needs for affiliation and privacy were conceived to be met by facilitating home territorial relations. It was also recognized that regulation of relations between

Table 4-11

Measures of Facilitative Attributes

System Level Attribute	Indicators	
	Personal Control	Social Support
Hierarchical		
Proximal:		
Direction	Self-determination of activities	Supervisory assistance in activities
Reinforcement	Participation in the definition & application of contingencies	Clear, contingencies which are applied uniformily
Distal:		
Organization	Decentralized structure of hierarchical authority	Centralized structure of hierarchical authority
Vertical Communication	Access to decision makers	Not salient
Structure	General rules which are flexibly enforced	Specific rules which are strictly enforced
Territorial		
Proximal:		
Possession	Personal control over use of space	Personal markings of space
Homogeneity	One or two collaborators interested in doing the same things	Presence of group with same values
Distal:		
Separation	Frequent contact and personal involvement with outsiders	Not salient
Range	Large territorial range with contact with outsiders	Not salient
Integration	High socal control over behavior	Low social control over behavior
Functional		
Proximal:		
Social Status	Duties and responsibilities change with performance of functions	Duties and responsibilities are clearly defined by authority
Spatial Status	Self-defined space for own functional activities	Shared space for common functional activities
Functional Role	Differentiated, specialized functions	Undifferentiated, shared functions
Time		
Schedule	Self-allocation of time for functions	Allocation of time for functions by authority
Attendance	Self-regulated	Other regulated
Pace	Variable	Steady

home and work environments by hierarchical systems should facilitate social support while personal control should be facilitated by regulation of this relation by territorial systems.

Conclusions

This analysis has tested working hypotheses derived from broad-ranging, exploratory interviews with regard to environmental preferences related to social support and personal control. Certain dimensions, and measurements of preferences along these dimensions, were found to be significantly related to preferences of respondents classified by predispositions. Unifying concepts were developed to explain the patterns of variation in preferences by predispositions. The final product was specification of systems of measurable environmental attributes which empirical evidence indicates facilitate personal control and social support in interaction with one another.

These findings support the working hypothesis that the attributes of urban environments which facilitate social support and personal control vary with behavioral predispositions. The findings do not, of course, prove the validity of these hypotheses, but they do indicate that the concept that relationships to environments vary with predispositions has construct validity.

One of the purposes of the research is to identify attributes of urban environments which may be modified by urban planning and design. At the same time, a basic assumption of the research was that the urban environments must be defined in terms of attributes relevant to behavior and must take into consideration both physical and social dimensions (see literature review in proposal, Appendix A). If it is true, as assumed in the original proposal, that most social science research ignores physical attributes, and most planning and design research ignores social attributes, it must be expected that, to the extent that this research emphasizes one or the other set of attributes, findings will be perceived by some readers to be inadequate either as guides to planning intervention or as advancement of theoretical understanding of the relation of urban environments to personal well-being.

It is necessary to appreciate fully the implications of these findings to abandon preconceived notions of either planning or epidemiological problems. First, the problems of urban planning are not to design the physical environment, but rather to generate design syntheses of environmental factors which are effective in solving urban problems. This research provides a theoretical framework with which to identify and to analyze these problems. For example, urban planners until recently have virtually ignored the relation of the individual to hierarchical authority at both work and home and the effects of the work environment on the home environment. This resulted in a variety of much-criticized blunders. In more recent times, a crude concept of citizen's participation has developed to take into consideration the relation between the individual and community authority and economic development and employment has been recognized as important for neighborhood revitalization. Nevertheless, many planning efforts continue to be ineffective.

The findings of this research suggest that relationships to hierarchical authority are intrinsic elements of urban planning and design problems. They also indicate that the effectiveness of different design solutions to this problem will vary with behavioral predispositions of the population. Contrary to preconceived notions of design, urban planners have major opportunities to vary the relationships of individuals to authority by neighborhood planning: they can design regulations with highly specific and structured rules or with flexible rules; they can emphasize a clear, unambiguous structure for decision-making or a flexible one. Probably more importantly, however, they can take into consideration variable needs for privacy and affiliation in neighborhoods and develop neighborhood mechanisms for affecting property maintenance and control over behavior which respect these needs.

For another example, designers have recently become interested in the implications of the concept of territoriality for neighborhood design. This research suggests that very strong differences in territorial preferences exist between people with different behavioral predispositions which have not previously been so clearly defined. Beyond this important finding, however, other findings suggest two extremely important functions for territoriality that have not been generally recognized among designers. The first is that territoriality at home serves important adaptive functions (privacy and affiliation) in compensating for conditions at work. To our knowledge, this function has never been previously identified. The second function of territoriality which this research suggests is that it represents a mechanism for community social integration and control over behavior. This appears to be a vital function in the preservation of sound urban neighborhoods and the prevention of neighborhood decline from such factors as declining property maintenance, vandalism and property abuse, and delinquency and crime.

The examples should be sufficient to indicate the significance of the research findings for urban planning and design. What is required for understanding and effective use of these research findings is for urban planners and designers to develop a *theoretical* orientation to planning and design problems to replace their traditional *technical* orientation. This technical orientation leads to definitions of problems in terms of very specific variables borrowed from disciplines which originally constitute design and planning professions and whose theoretical significance is usually obscure. A theoretical perspective, however, defines design and planning variables at a more abstract level which is conducive to general application to a variety of environments and cumulative development and refinement of knowledge. A good theory, however, is sufficiently specific and precise so that its variables can be unambiguously measured, and this research has identified its facilitative attributes in terms which, at the very least, approach this level of specification.

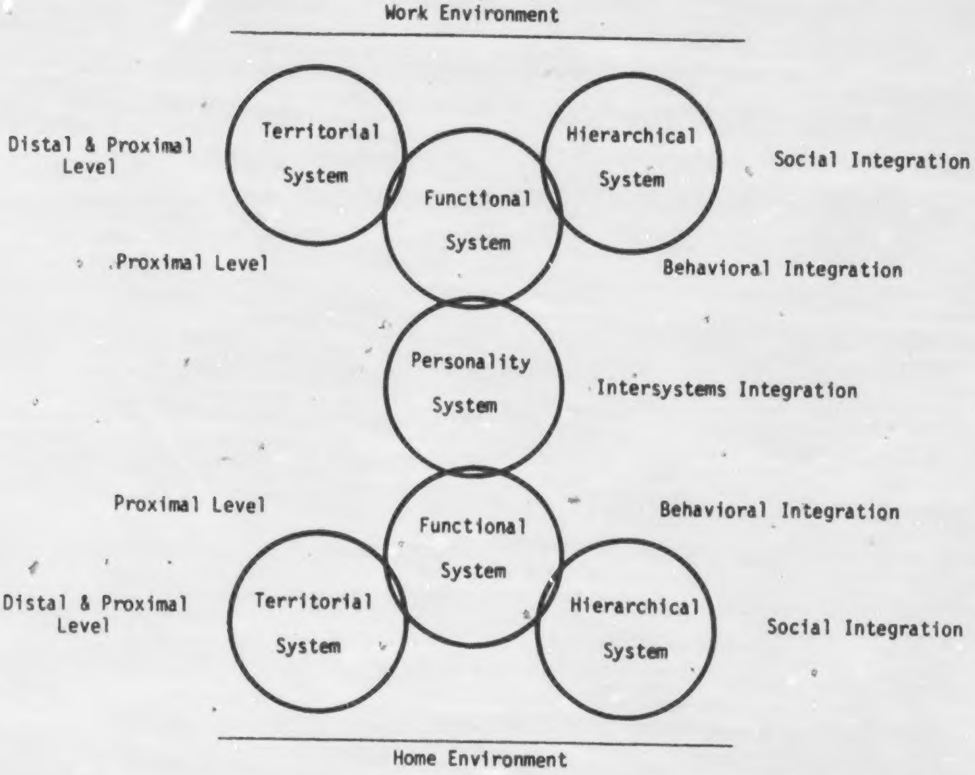
The environmental variables identified in this research, however, have a second purpose, which is to identify attributes of urban environments related to personal well-being. In this respect, two very important connections between urban environments, defined in terms which can be modified by planners and designers, and variables significant for well-being have been identified. The first is the relationship of urban environmental attributes to social control. The findings indicate that the environmental attributes which appear to facilitate personal control and social support are also attributes which appear to facilitate social control over behavior by hierarchical authority and territorial community. The findings also suggest that very different attributes of the urban environment seem to facilitate social control for groups oriented to social support than for those oriented to personal control. Finally, the findings indicate how hierarchical and spatial structure which perform social control functions seem to be related to one another in concepts of function and how work and home functions seem to be related to one another by time structures. This appears to integrate conventional theories of social control with environmental concepts.

The second connection between environmental variables and well-being variables implied by these research findings is with the concept of personality. These findings imply that respondents desired relations with their home environments which are consistent with personality needs for respect, privacy, affection, and affiliation. While the patterns of responses to preference measures suggest that satisfaction of these needs are sought in both territorial relations at home and work, it appears that they are more strongly expressed in home environments than in work environments. This finding suggests that Caudill's general concept of linked adaptive systems best explains how home and work environments together facilitate personal control and social support (Caudill, 1956). According to this concept, the organism is linked to the environment by various sytems which facilitate adaptation (e.g., national, community, family, emotional, etc.), so that stress in one system may be experienced as strain in another system and one system may facilitate adaptation to other systems. This perspective suggested that the foregoing systems may be conceived as linked adaptive systems which facilitate social integration and personality integration. This conceptual schema is presented in Figure 4-3.

This additional concept of the relation of environmental variables to personality variables was not anticipated in the original conceptual scheme for this research. Urban environments were conceived to be related to personal well-being by effects of feedback of consequences of behavioral responses to environments for personal goals and experienced as social isolation and social press. This subject will be examined

Figure 4-3

Concept of Connections Among Facilitative Systems



further in the next chapter. In the subsequent chapters, conceptual implications of research findings in this and other chapters for the original model of person-environment relations, presented in the first chapter, will be considered.

V. MEASURES OF WELL-BEING

The second and third working hypotheses set forth in the proposal for this research assumed that social isolation and social press were psychological consequences of failure to attain goals of social support or personal control. While these propositions are not tested in this research, measures of social isolation and social press had to be developed to carry out exploratory research. Because of the timing of various studies, working measures were employed, but as the research progressed, these were refined in order to prepare for subsequent research. This chapter will present the results of these efforts to develop and to validate scales that measure these psychological states.

Research Procedures

Two separate procedures were used in developing and in testing the validity of measures of social isolation and social press. The first procedure was to identify and to refine scales designed to measure these psychological states by analysis of response distributions, convergent and discriminant validity of items, and reliabilities of scales across four varied samples. The second procedure was to determine the relation of the resulting scales to measures of illness and social maladjustment in a sample of urban residents obtained for the environmental preference study. This latter procedure was employed to assess the validity of concepts and measures developed by the first procedure, using variation in health states and social adjustment as criteria. Each of these two distinct studies will be reported separately.

Original Concepts

Social isolation and social press were conceived to be psychological phenomena related to illness and abnormal behavior. The term "social isolation" was defined as a psychological state in which individuals feel that they are separated from individuals and/or groups which are significant to them. The term "social press" was defined as a psychological state in which individuals feel that they are unable to control social transactions. Each concept was based on resynthesis of findings from research on a variety of subjects.

Social isolation conceived as loss of an important object or relationship has been found to be related to illness in a variety of so-called personality studies (Solomon, 1969; Bahnson & Bahnson, 1968; Taylor, 1974; Thomas & Duszynski, 1974; Paykel, et al., 1975; Akiskal & McKinney, 1973). Manifestations of illness include cancer, autoimmune and infectious diseases, suicide, depression and mental illness. Social isolation conceived as lack of group supports has also been related to illness in a variety of studies of situational factors (Holmes, 1956; Holmes, et al., 1961; Cassel & Tyroler, 1961; Nuckools, et al., 1972; deAruajo, 1973; Wrightsman, 1975; Sviland, 1973; Dudley, et al., 1969).

Social press seems to be related to coronary heart disease. This illness is related to experiences of prolonged opposition between important internal goals and values, on the one hand, and demands of external environment, on the other hand (Dohrenwend, 1967). Rosenman and Friedman, and their associates (Rosenmen, et al., 1966) found that the Type A behavior pattern is related to coronary heart disease. A major ingredient of this behavior pattern is a sense of time urgency (Jenkins, 1966) which indicates a lack of control over transactions with others (Glass, et al., 1974). Lack of control over recent events has been related to suicide (Paykel, 1974) and situational pressures to gouty arthritis (Katz & Weiner, 1975). Frustration has been related to epilepsy (Taylor, 1969), skin conditions (Musaph, 1969), asthma (Aitken, 1969) and essential hypertension (Brod, 1959; Ulrych, 1969). Frustration implies lack of control over social transactions. In addition, studies of situational factors suggest that social press results from lack of control of social transactions. The effects of status inconsistency are explained, in part, by frustration (Jackson, 1962; Rush, 1967). Lack of control over demands and resources is conceived to explain the effect of social role conflict and ambiguity (Kahn, et al., 1964). Interferences with striving for social integration (i.e., preventing self-determination) are believed to explain the mental and emotional effect of community disintegration (Leighton, 1968).

Social isolation and social press thus appear to be related to a variety of manifestations of illness and abnormal behavior. This suggests that both psychological states may represent stimuli which trigger adaptive responses, with the particular type of response, and subsequent form of illness or abnormal behavior, determined by variable previous experiences and/or genetic endownments of individuals. Each psychological state appears to be related to failure to attain certain goals in interaction with settings. Social isolation was conceived to be related to failure to obtain social support from the environment; social press was conceived to be related to failure to obtain personal control over the environment.

Scaling Procedures

Items designed to measure social isolation and social press had been developed prior to this research study. Content analysis midway through the research suggested that some measures of social isolation were inappropriate in that they seemed to measure negative attitudes about life in general. Thereafter, some items were eliminated which seemed logically inconsistent with the concept of social isolation and new items were developed. As the social press items were conceptually consistent and met Guttman criteria for unidimensional scales, they were regarded as approriate. Thus, different sets of social isolation items were used in samples, while the social press items remained relatively unchanged.

Individual Items

The items developed to measure social isolation are presented in Table 5-1. They may be described as falling into the following categories: (a) measures of a subjective sense of isolation; (b) measures of social and spatial separation from people in general; and (c) measures of social and spatial separation from significant groups. The first set of measures (a) represents items selected by use of Guttman unidimensional scaling techniques in studies prior to this research.

Table 5-1

Measures of Social Isolation

Items	Sample Base*			
	1	2	3	4
I find that I can't count on other people to do what they said they would do.	+	+	-	-
Recently it seems that I can't find anyone else to talk to.	+	+	-	-
I sometimes feel lonely and out of touch with other people.	+	+	+	+
Everyone should have someone in his life whose happiness means as much as his own.	+	+	-	-
I often feel that other people are not really interested in me.	+	+	+	+
I find it easy to mix with a new group of people.	+	+	-	-
I often feel awkward and out of place.	+	+	-	-
Most people are unable to understand me.	+	+	+	+
I still can depend upon some people to come through in a pinch.	+	+	+	+
I am surrounded most of the time by people with who I feel very close.	-	-	+	+
I feel close to a small group of people whom I don't see often enough.	-	-	+	+
Most people who are important to me are too far away.	-	-	+	+
I live in a lonely place.	-	-	+	+
I wish I could be with the people that I care about more often.	-	-	+	+
I have little in common with the people that I see most of the time.	-	-	+	+

*Sample Base

1 = Homogeneous student
2 = Urban elderly
3 = Heterogeneous urban
4 = Bureaucratic employee

These were subsequently supplemented with the second two sets of measures (b and c) when it was perceived that these items represented diffuse measures of social isolation, implying general social maladjustment or social disintegration. Separation from significant others, however, may be experienced as an emotion of loneliness and distance from others (as in a) or cognitions of separation from people in general or significant groups (as in b and c). These various aspects of social isolation were measured by 15 items.

Social press was defined a psychological state in which individuals feel that they are unable to control social transactions. The individual may feel a lack of control over transactions in the environment from (a) more social transactions than desired, (b) less social transactions, than desired, or (c) inappropriate kinds of social transactions. The previous research on which the concept of social press was based defined lack of control almost entirely in terms of the first conception. This was because use of Guttman unidimensional scaling techniques tended to eliminate all items except those measuring overload in social transactions. Measures of time urgency, which is an aspect of overload, emerged from this procedure. These items are presented in Table 5-2.

Data Collection

The foregoing measures were used in various questionnaires administered to four different groups of subjects, as indicated in Tables 5-1 and 5-2. Two of the samples were described in Chapters II and III; the other two samples were composed of subjects from other research studies. The purpose of the use of a variety of samples was to analyze the composition, stability and variability of scales across samples of different types of people. The following samples were obtained.

Sample 1: Homogeneous Student Population. A total of 257 Pennsylvania State University students comprised this sample. The composition of this sample was previously presented in Chapter II.

Sample 2: Urban Elderly Population. A total of 102 elderly individuals who were residents of the Harrisburg Pennsylvania Standard Metropolitan Statistical Area and were over 60 years of age comprised Sample 2. The sample was selected to include comparable proportions of

Table 5-2

Measures of Social Press

Items	Sample Base*			
	1	2	3	4
Recently, I have noticed that I have been impatient with others.	+	+	+	+
Things just seem to be piling up on me lately.	+	+	+	+
Lately I have been worried about things not being done on time.	+	+	+	+
Each person seems to think that my work with them is all I have to do.	+	+	+	+
I find myself striving to get more and more done these days.	+	+	+	+
There just isn't enough time to get things done.	+	+	+	+
There are just too many people making demands on me.	+	+	+	+
There is just too much for me to do to ever get caught up.	-	-	+	+

*Sample Base

1 = Homogeneous student
2 = Urban elderly
3 = Heterogeous urban
4 = Bureaucratic employee

subjects with low and high educational and income levels. This was done to achieve a reasonable range of social class characteristics and to permit comparisons of responses of young and old adults with comparable education.

Sample 3: Heterogeneous Urban Population. Respondents in this sample were drawn from visitors to the Family and Community Medicine Clinic of the Hershey Medical Center in Hershey, Pennsylvania, and the Hamilton Medical Center in Harrisburg, Pennsylvania. This sample is described in Chapter III. It contained a reasonable balance of racial and social class characteristics. The total sample included 183 individuals.

Sample 4: Bureaucratic Employee Population. Respondents in this sample were employees of the Pennsylvania Department of Public Welfare agencies at the clerical, professional and management levels. A total of 249 volunteers employed at regional offices comprised this sample.

A summary of the selected demographic characteristics for each sample is presented in Table 5-3. The demographic variables of interest were: occupational ranking, educational level, and age. The samples varied considerably in those characteristics, but all four samples collectively contained considerable diversity of social characteristics.

After completion of informed consent procedures, respondents in all samples were asked to complete pre-coded questionnaires. In all samples, with the exception of the elderly sample, all subjects were able to complete their questionnaires independently of the researcher. In the elderly sample, due to motor and other physical functioning difficulties, the interviewers often read each of the items and recorded the responses; where respondents were capable and interested in completing the questionnaire themselves, the interviewer only clarified directions when asked.

Data Analysis

Coefficients of similarity and Likert techniques rather than Guttman unidimensional methods were used to develop scales. Because there were few items, and their marginals differed, coefficients of similarity were considered to be better indicators of content homogeneity than single correlations. Therefore, the procedure was to

Table 5-3

Demographic Characteristics of Samples

Demographic Characteristics	Student		Elderly		Urban		Bureaucratic	
	N	%	N	%	N	%	N	%
Occupational Ranking	(Father's)							
Low: Operators, laborers	20	12	36	35	83	44	0	0
Medium: Craftsmen & kindred workers	31	18	30	29	38	20	211	85
High: Professionals, managers, technical & kindred workers	121	60	31	31	68	36	38	15
Education Level	(Subject)							
Low: Less than high school	--	--	42	41	36	19	0	0
Medium: High school	182	100	37	21	102	45	139	56
High: More than high school	--	--	37	36	48	26	103	42
Age	(Subject)							
18-25	176	94	0	0	44	23	34	14
26-35	11	6	0	0	59	54	93	38
36-65	0	0	16	14	45	26	117	48
65-up	0	0	86	86	37	20	0	0

compute matrices of tetrachoric correlations and then determine coefficients of similarity between the columns of correlations in the matrices. Coefficients of similarity were arranged to inspect for convergent and discriminant validity. Likert scaling techniques were used to test for the reliability of the scales developed from coefficients of similarity.

Responses were pre-coded by degree of agreement and disagreement with statements and each response was given a score for each item between 1 to 4. The higher scores were indicative of high isolation and high press. The total score for each measure was then treated as interval level measurement. The measures were then evaluated for internal consistency and reliability in successive iterations, resulting in elimination of poor items and development of scales.

Findings of Research

Analysis of Similarity Coefficients. Coefficients of similarity were computed for all samples. The resulting matrices were inspected to determine their convergent and discriminant validity. The result of this analysis for the student and elderly samples suggested that the earlier decision to delete and to add social isolation items for urban and bureaucratic samples had been correct. The coefficients of similarity indicated that the items had little convergent and discriminant validity. Because the social isolation items seemed less convergent than the social press items, the source of problems of discriminant validity appeared to be the former items. This impression was substantiated by the coefficients of similarity obtained for the urban and bureaucratic samples reported in Tables 5-4 and 5-5.

For the urban sample (Table 5-4), there were five clusters of convergent items. Both social press and social isolation items were contained in only the first cluster, and this was limited to one social press item. The items in each cluster were as follows:

Table 5-4

Coefficients of Similarity for Measures of Social Press and Social Isolation*

	(1) Social Press & Social Isolation						(2) Social Press				(3) Social Press			(4) Social Isolation			(5) Social Isolation
Item Number	7	12	16	14	18	15	6	4	8	2	1	5	3	11	13	10	9
7	--																
12	.95	--															
16	.90	.88	--														
14	.62	.57	.43	--													
18	.79	.86	.77	.48	--												
15	.39	.46	.47	.16	.67	--											
6	.83	.85	.62	.67	.75	.42	--										
4	.86	.80	.67	.61	.64	.29	.88	--									
8	.91	.85	.75	.56	.65	.24	.81	.93	--								
2	.85	.80	.64	.60	.66	.32	.84	.85	.88	--							
1	.69	.65	.60	.37	.45	.19	.67	.86	.85	.74	--						
5	.66	.65	.56	.30	.52	.30	.71	.86	.79	.74	.91	--					
3	.21	.18	.15	.18	.16	.12	.34	.43	.29	.34	.47	.54	--				
11	.74	.80	.80	.33	.78	.56	.62	.60	.57	.55	.49	.56	.24	--			
13	.62	.67	.67	.27	.67	.44	.47	.50	.48	.39	.40	.44	.13	.85	--		
10	.74	.41	.50	.02	.35	.41	.25	.31	.33	.30	.39	.48	.16	.63	.63	--	
9	.42	.44	.48	.50	.39	.22	.28	.20	.23	.20	.07	.04	.00	.36	.30	.03	--
17	.73	.75	.77	.49	.70	.46	.56	.46	.51	.43	.27	.24	.04	.65	.53	.21	.79

*Urban Sample, N = 183

Table 5-5

Coefficients of Similarity for Measures of Social Press and Social Isolation*

	Clusters														
	Social Press							Social Isolation (1)					Social Isolation (2)		
Item Number	4	6	15	14	22	30	29	32	33	23	16	34	9	8	
6	.73	--													
15	.93	.82	--												
14	.78	.64	.86	--											
22	.64	.61	.73	.90	--										
30	.64	.48	.69	.78	.71	--									
29	.59	.43	.61	.70	.61	.78	--								
32	.05	.01	.09	.28	.32	.40	.42	--							
33	.05	.05	.10	.29	.33	.36	.39	.80	--						
23	.02	.00	.03	.21	.24	.30	.30	.80	.62	--					
16	.14	.05	.17	.35	.36	.54	.59	.88	.72	.66	--				
34	.17	.07	.16	.36	.39	.48	.63	.75	.65	.60	.84	--			
9	.11	.12	.20	.39	.39	.54	.41	.55	.55	.47	.52	.38	--		
8	.11	.16	.19	.26	.24	.36	.34	.26	.35	.16	.29	.23	.66	--	
24	.15	.18	.21	.43	.46	.45	.45	.43	.60	.38	.45	.51	.66	.52	--

*Bureaucratic sample, N = 249

Cluster 1

7. Each person seems to think that my work with them is all I have to do. (SP)

12. I often feel that other people are not really interested in me. (SI)

14. I still can depend on most people to come through in a pinch. (SI)

18. I sometimes feel lonely and out of touch with people. (SI)

15. I wish I could be with people that I care about more often. (SI)

Cluster 2

6. Lately I have been worried about about things not being done on time. (SP)

4. Things just seem to be piling up on me lately. (SP)

8. There are just too many people making demands on me. (SP)

9. Recently I have noticed that I have been impatient with others. (SP)

Cluster 3

1. There is just too much to do to ever get caught up. (SP)

5. There isn't enough time to get things done. (SP)

3. I find myself striving to get more and more done these days. (SP)

Cluster 4

11. Most people who are important to me are too far away. (SI)

13. I live in a lonely place. (SI)

10. I feel close to a small group of people whom I don't see enough. (SI)

Cluster 5

9. I am surrounded most of the time by people with whom I feel very close. (SI)

17. I have little in common with the people that I see most of the time. (SI)

The clusters were conceptually coherent. Except for item 7, cluster 1 consists of items which indicate personal isolation in the sense of loneliness, while clusters 4 and 5 indicate the absence and presence of significant social groups. Cluster 2 implies overload in transactions, while cluster 3 is defined in terms of items indicating time urgency.

For the sample of bureaucratic employees, similar clusters of convergent items emerged (see Table 5-5). Cluster 1 consisted of social press items which reflected overload in social transactions:

4. There is just too much for me to do to ever get caught up.

15. There just isn't enought time get things done.

6. I find myself striving to get more and more done these days.

14. Things just seem to be piling up on me lately.

22. Lately I have been worried about things not being done on time.

30. There are just too many people making demands on me.

29. Each person thinks my work with them is all I have to do.

Cluster 2 consisted of social isolation items similar to cluster 1 in the urban sample. The items suggest personal loneliness from poor relationships to people:

32. I have little in common with the people that I see most of time.

33. I sometimes feel lonely and out of touch with other people.

23. I still can depend upon some people to come through in a pinch.

16. I often feel that other are not really interested in me.

Cluster 3 contains three social isolation items, which are characterized by group separation:

9. Most people who are important to me are too far away.

8. I feel close to a small group of people I don't see often enough.

24. I wish I could be with the people I care about more often.

This analysis of coefficients of similarity in two samples indicated that certain measures of social press were substantially homogeneous in content. This structure of attitudes represented overload in social transactions. The measures of social isolation formed two conceptually separate clusters: (1) the concept of emotional isolation, and (2) the concept of separation from significant groups. Inspection of coefficients of similarity across convergent clusters suggested substantially similar findings for both samples.

Scale Development. The next procedure was to evaluate the convergent item clusters in terms of Likert scale criteria. This was done on each of the samples by reiterative procedures, using the tetrachoric analyses as guides in the elimination of items as well as the intercorrelations of individual items with all items. Items were eliminated which were both unrelated and logically inconsistent with concepts. The analysis was confined to the bureaucratic and urban samples, which contained the items which seemed the best measures of both social isolation and social press. The results are presented in Tables 5-6 and 5-7.

The Social Press Scale in Table 5-6 consists of items which measure overload in social transactions, particularly with respect to the amounts of work in relation to time. This appears to represent one dimension of social press.

The Social Isolation Scale in Table 5-7 is constructed from two subscales. These were developed by separating items which appeared to measure social separation, and which had low adjusted r scores, from the items which seemed to measure emotional isolation, which had higher r scores, and by eliminating items which were conceptually incompatible with these two concepts. The latter items had relatively low r scores. The relations of each item to each subscale were comparable across samples, but generally weaker in the more socially diverse urban sample than in the bureaucratic sample. The strength of adjusted r scores for the items forming the Social Separation Subscale were much stronger than when these items were combined with other items.

Intercorrelation of scales and measures are reported in Table 5-8. The Emotional Isolation and Social Separation Subscales were positively correlated, but the strength of relationship was consistent with the assumption that each represented measures of different dimensions of a

Table 5-6

Likert Scales for Social Press

Items	Adjusted Item - Total r	
	Bureaucratic Sample N = 249	Urban Sample N = 188
Things just seem to be piling up on me lately.	.818	.657
Lately I have been worried about things not being done on time.	.730	.449
There just isn't enough time to get things done.	.806	.692
There are just too many people making demands on me.	.679	.390
There is just too much for me to do to ever get caught up.	.761	.631
Alpha indices of reliability	.87	.70

Table 5-7

Likert Scales for Social Isolation

Subscale by Dimensions Items	Adjusted Item - Total r	
	Bureaucratic Sample N = 249	Urban Sample N = 188
Emotional Isolation Subscale*		
I sometimes feel lonely and out of touch with other people.	.683	.613
I often feel that other people are not really interested in me.	.597	.564
I live in a lonely place.	.614	.542
I have little in common with the people that I see most of the time.	.589	.589
Social Separation Subscale**		
I feel close to a small group of people whom I don't see often enough.	.661	.602
Most people who are important to me are too far away.	.620	.597
I wish I could be with the people that I care about more often.	.449	.524

*Alpha indices of reliability = .71 (Bureaucratic) and .67 (Urban).
**Alpha indices of reliability = .60 (Bureaucratic) and .60 (Urban).

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Table 5-8

Intercorrelation of Scale and Subscale Measures of Social Isolation and Social Press*

Scales and Subscales Samples	Emotional Isolation	Social Separation
Emotional Isolation		
Bureaucratic Sample	--	--
Urban Sample	--	--
Social Separation		
Bureaucratic Sample	.359	--
Urban Sample	.415	--
Social Press		
Bureaucratic Sample	.281	.269
Urban Sample	.421	.296

*All correlations $p \leq .001$

Bureaucratic Sample N = 249
Urban Sample N = 188

multidimensional phenomenon. The fairly strong relationship between Social Press scores and Emotional Isolation scores in the urban sample, however, was inconsistent with the expected relationship of social press to emotional isolation.

Validation Procedures

In connection with the use of the Hershey Medical Center and the Hamilton Health Clinic to obtain subjects for exploratory interviews on environmental perceptions, data was obtained with regard to health and social adjustment for exploring the relationship of these variables to both social isolation and social press. The design of this exploratory research is reported in Chapter III. These additional measures of social adjustment, health, and life change events were simply added on to the research which was designed to explore environmental perceptions.

Measures of Well-Being

Psychological. These were measures of social isolation and social press presented in Tables 5-6 and 5-7. However, one item - "I live in a lonely place" - was transferred from the Emotional Isolation to Social Separation subscale because this slightly improved coefficients of reproducibility.

Social Maladjustment. The concept of social maladjustment was defined in terms of the individual's evaluation of relationships to people with whom he interacts. A Social Maladjustment Scale was developed by Clark (1967) to measure relationships in different spheres of life. This was modified for use in an interview format. The Alpha coefficient of reliability which was obtained for the modified Social Maladjustment Scale (.77) was within acceptable limits. This measure was used to measure personal and social adjustment in the urban adult sample.

Illness Severity. This measure was developed from the Seriousness of Illness Scale developed by Wyler, et al., (1968) in consultation with the rating physicians at both Clinics. The scale was slightly modified to permit evaluation of health from medical records. Ratings within illness types was also made possible by categorization of illness as acute and chronic. Categories were derived from Wyler, et al., (1971). This measure was used to measure health in the urban adult sample. Reliability was assessed by physicians comparing trial ratings and finding consistent results.

All instruments are presented in Appendix D.

Life Change Events

Wyler had used a seriousness of illness scale to assess the degree to which life change events could predict variation in strength of illness in hospital patients. In order to compare the relationships of social isolation and social press to severity of illness with the relationships obtained in this previous study, a schedule of life change events was used in the research. This schedule is identical to the Social Readjustment Scale (SRE) developed by Holmes and Rahe (1967), and extensively used and validated in other research. (The term Schedule of Life Change Events was employed to avoid confusion with the Social Maladjustment scale.) While questions exist with regard to the appropriateness of the SRE scale for different populations, the clinical population under study was similar to the group studies by Wyler with which comparisons would be made.

Data Collection

In connection with screening procedures for interviews about environmental perceptions, subjects filled out a questionnaire which contained the social isolation and social press items. In the interviews, the Schedule of Life Change Events and the Social Maladjustment scale was administered orally to respondents. Physicians at the two clinics then rated the severity of illness of these subjects and classified illness by type on the basis of medical records. Because some of the interviewees were not patients at either clinic (some were relatives and friends of patients or members of the hospital staff), health ratings could not be obtained for all of these subjects. In order to provide a sufficient number of subjects, additional individuals, with high and low social isolation and social press scores on screening questionnaires, were selected for health ratings. This provided a total of 69 subjects, but not all of these subjects had been interviewed and therefore not all had scores for life change events and social maladjustment. Thus, there were samples of different size for various measures, composed of individuals with only the common characteristic of being visitors to the Hershey and Hamilton medical clinics. The demographic characteristics of the samples are shown in Table 5-9.

The data analysis involved two steps. First, the correlations of the independent variables with one another, and with the dependent variable measures of well-being, were examined. Second, control for various demographic predispositional characteristics were used.

Findings of Research

Distributions of Health Ratings. Table 5-10 shows the distribution of physician ratings of severity and type of illness in the urban sample. It is evident that the range of health ratings was severely restricted.

Severity of Illness. Pearson correlation coefficients were computed to determine the relationships between measures of social isolation and social press and severity of illness. Only the Emotional Isolation subscale was related to severity of illness. The Social Press scale was negatively related to severity of illness. Comparison of correlations indicated that Emotional Isolation was more strongly related to severity of illness than life change events. (See Table 5-11)

Type of Illness. All of the measures of psychological states were significantly and positively related to chronic illness. However, life change events were not related to type of illness. (See Table 5-11)

Effects of Illness Type on Health Rating. The latter finding suggested that illness type may vary the relationship between psychological variables and health measures. Thus, partial correlation coefficients were computed, controlling for illness type. The rationale for controlling for illness type was that clinical classification of illness may influence rating of severity of illness. The findings are reported in Table 5-11. Illness type did not vary the relationship of psychological variables to severity of illness ratings.

Social Maladjustment. Measures of social maladjustment were not significantly related to severity of illness, but were significantly

Table 5-9

Demographic Differences Among Samples

Number/Percent	Urban Samples (n = 189)	
	Hamilton	Hershey
Occupation Ranking		
Low: operators, laborers	40 58.8	43 35.5
Medium: craftsmen, and kindred workers	19 27 .9	19 15.7
High: professional, managers, technical, and kindred workers	9 12.2	59 48.8
Education		
Low: less than high school	28 43.1	8 6.6
Medium: High school	36 55.4	66 54.5
High: More than high school	1 1.5	47 38.8
Age		
18-25	26 38.2	18 14.8
26-35	19 27.9	40 32.8
36-65	17 25.0	56 45.9
66-up	6 8.8	8 6.6

Table 5-10

Distribution of Severity and Illness Type

(Acute vs. Chronic)

Number/Percent	Hamilton		Hershey	
Severity	Acute	Chronic	Acute	Chronic
1 no signs or symptoms	0	0	0	0
2 signs without symptoms	1 8.3	0	0	4 18.2
3 working with symptoms	8 66.7	4 28.6	10 47.6	2 9.1
4 working with some environment modifications	2 16.7	9 64.3	10 47.6	15 68.2
5 homebound	0	1 7.1	1 4.8	1 4.5
6 hospitalized	1 8.3			

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Table 5-11

Correlations of Measures of Psychological States and Life Change Events with Measures of Severity of Illness and Illness Type

Independent Variables	Severity of Illness	Chronic vs. Acute	Control for Illness Type
Life Change Events	.05	.05	.04
Social Press	-.06	.30***	-.10
Social Separation	.09	.23**	.06
Emotional Isolation	.18*	.25**	.15*
Social Maladjustment	.10	.23**	--

* $p \leq .05$ (one-tailed test of significance)
** $p \leq .01$ (one-tailed test of significance)
*** $p \leq .001$ (one-tailed test of significance)

related to chronic illness. While this suggested that chronic illness may cause problems of social adjustment, which in turn may lead to social isolation or social press, this interpretation was not entirely consistent with the minor effect of control for variation in illness type of the relationship between Emotional Isolation and severity of illness.

Therefore, social maladjustment was examined as a dependent variable. (See Table 5-12) Very strong and significant relationships were found between psychological states and social maladjustment. There was virtually no relationship between life change events and social maladjustment measures.

Control for Age and Education. Previous research suggests that illness is related to age and social class. While education is not a direct measure of social class, it is interrelated with occupational status and moderately related to income. Thus, these controls were applied to the relationships between independent and dependent variables.

The effect of control for age and education was, in most cases, negligible. This is shown in Table 5-13. Control for education, however, did eliminate the significant relationship between Emotional Isolation and severity of illness. The effect was, however, not sufficient to indicate that the relation of Emotional Isolation to illness was spurious; rather, the results of controlling for education indicated that education, or social class, contributed to a minor degree to the relationship between this measure of social isolation and severity of illness.

Conclusions

The procedure employed to validate scales to measure social isolation and social press was to determine their statistical relationships to measures of severity of illness and social maladjustment. It was recognized that this procedure had limited usefulness as a validation technique. Although strong relationships may be found between illness and a measure of psychological state, it is always possible that illness

Table 5-12

Correlations of Psychological States and Life Change Events with Social Maladjustment

Independent Variables	Social Maladjustment
Life Change Events	-.02
Social Press	.41***
Social Separation	.50***
Emotional Isolation	.69***

*** p = .001 (two-tailed test of significance)

Table 5-13

Comparisons of Correlations With and Without Control for Age and Education

Independent Variables	Illness Severity			Social Maladjustment		
		Controlled for:			Controlled for:	
	Simple	Age	Educ.	Simple	Age	Educ.
Life Change Events	.05	.09	.06	.03	.05	.01
Social Press	-.06	-.09	-.09	.41***	.42***	.39***
Social Separation	.09	.06	.06	.50***	.52***	.49***
Emotional Isolation	.18*	.16*	.14	.69***	.69***	.68***

* p = .05 (one-tailed test of significance)
*** p = .001 (two-tailed test of significance)

may cause the state of social isolation or social press. The procedure is, however, useful as a method for developing measures by exploring relationships. Concepts and measures which are not related to illness are less likely to be useful than those which are related to illness, assuming being sick is not likely to eliminate deleterious psychological states.

By this criteria, therefore, the relationship of scales and subscales to severity of illness suggests that Emotional Isolation may represent an appropriate concept and measure of social isolation. Severity of illness represents a stringent test of the construct validity of social press and social isolation. In the development of life change event measures, the criterion of predictive validity was frequency of illness, although it was subsequently shown that those measures have modest capacity to predict seriousness of illness in retrospective studies. The finding that the relationship of one measure of social isolation to severity of illness, in a small sample with considerable range restriction, was stronger than for life change events implies that this concept of isolation should be examined further.

Of course, this relationship may be due to isolating effects of illness on psychological state, which was not examined in this pilot study. This interpretation is inconsistent, however, with several findings. One of these findings is that control for illness type does not substantially affect the significant relationship of Emotional Isolation score to severity of illness. If severe illness caused isolation, then it would be expected that severe chronic rather than severe acute illness would account for this relationship. While Emotional Isolation is related to chronic illness, type of illness does not eliminate the significant relationship of scores on this scale to severity of illness.

The research indicates, however, that the Social Press scale is not related to severity of illness. The non-significant relationship to severity of illness was negative. The explanation for this result is suggested by the findings reported in Chapters III and IV. In these chapters, demand dimensions of environments were identified and considered to explain why certain measures which implied adaptive demands were unrelated to behavioral predispositions. Inspection of the content of the Social Press scale indicates that the items comprising the scale may represent measures of adaptive demands. This measurement problem appears to have stemmed from the similarity of the original definition of social press as inability to control social transactions with environments with the concept of adaptive demands. While the items in the Social Press scale clearly implied overload in social transactions, actual agreement with these statements did not necessarily imply that respondents were unable to control transactions. In fact, some items suggested active struggle to master the problem of overload, or control-seeking behavior.

The very strong and significant relationships of the Social Isolation and Press scales and the Social Separation and Emotional Isolation subscales to social maladjustment seems to suggest that each scale measures disturbances in social relations with others which are negatively evaluated by individuals. It is not possible to determine causal relations in this research. It is, however, unlikely that social maladjustment is causally related to severity of illness. The positive relationship of Social Press to social maladjustment, and its negative relationship to severity of illness, is inconsistent with this interpretation.

In summary, the research was useful as a pilot study to explore relationships between psychological variables and indicators of illness and social maladjustment and to develop scales. Range restriction in severity of illness, the fineness of the discriminations required to rate severity, and the small sample limited the results which were attainable. In comparison with the well-established life change events measure, which has been previously found to be related to both seriousness and type of illness, the relationship of Emotional Isolation to severity of illness was encouraging. The findings indicate that the concept of emotional isolation has greater construct validity than the concept of social separation. The items used to measure emotional isolation represent an adequate basis for a Social Isolation scale at this stage of research. The findings also indicate that the concept of social press is inappropriate and that the Social Press scale is not an appropriate measure of lack of personal control over the environment.

VI. REFINEMENT OF CONCEPTS

The foregoing findings of exploratory and methodological studies suggest refinements in the concepts on which these studies were based, which is an objective of the research. In this chapter, the various findings reported in previous chapters will be integrated and certain secondary findings will be introduced which were not reported in previous chapters to redefine concepts of behavior, environment and personal well-being.

Behavioral Predispositions

The original conceptual model for this research assumed that the relationship between urban environments and personal well-being could be best explained by the concept that individuals seek social support from the environment or personal control over the environment. These concepts represented the pivotal ideas in this research. Three issues are raised by this research with regard to these concepts.

The first issue was raised by variation in responses to predisposition measures between the student sample and a subsequent sample of 102 elderly people. Due to this variation, factor analysis of predisposition items in the elderly study did not replicate the Subordinate and Dominant factors found in the laboratory experiment with students. (A report of this research is contained in Appendix E.) These findings raised the question of whether the predispositions found in the student sample exist in other groups and, if so, how to define and to identify predispositions for different populations.

The second conceptual issue which arose in the research was how to define relationships between predispositions. Scores on the Dominant and Subordinate Scales were only weakly negatively correlated with one another in the student sample. This finding was inconsistent with the working hypothesis that predispositions were dichotomous. (This working hypothesis had been qualified by the reservation that the research would determine the actual relationships among traits.) However, the finding that low scores on the Dominant Scale predicted support-seeking behavior better than high scores on Subordinate Scale was consistent with the concept of dichotomous predispositions.

The third conceptual issue was raised by the relationship between Self-Direction scores and Dominant Scale in regression analysis. It was anticipated that observed support-seeking and control-seeking behaviors might be related to several measures of predispositions; however, the additive relationship of the Self-Direction scores to Dominant scores raised a new question of how both scales are related to one another and to predispositions.

Dominant and Subordinate Predispositions

The research provides a basis for further refinement and specification of concepts of predispositions. As reported in Chapter II, behavioral patterns were observed and measured which were consistent with preconceived patterns of support-seeking and control-seeking behavior, and measures of self-reported behaviors were highly significantly related to these behavioral patterns. Observed behaviors validate the concept that there were predispositions to overt behavioral patterns.

By this criterion, the items in the Dominant and Subordinate scales represent the best definitions of predispositions. Not only were these scales predictors of both control-seeking and support-seeking behavior, but the attributes of these observed behaviors were derived from concepts of Dominant and Subordinate behavior. Therefore, the concept that individuals are predisposed to Dominant and Subordinate behavior was established to have construct validity.

Relationships of Items to Observed Behaviors. It is thus assumed that control-seeking and support-seeking are manifestations of Dominant and Subordinate behavior and are determined by predispositions to these behaviors. Therefore, the attributes of these predispositions are defined best by the content of the individual items in these scales which are most strongly related to the behaviors. Table 6-1 presents

Table 6-1

Correlations of Measures of Dominant and Subordinate Predispositions to Observed Behaviors

Group	Scale (Relation to Scale)	Items*	Pearson's Correlations**			
			Control		Support	
			Rating	%	Rating	%
I.	Dom. (+)	People think of me as a direct and forceful person.	.29	.25	-.24	-.30
	Dom. (+)	I speak in an authoritative manner.	.28	.20	-.18	-.22
II.	Dom. (+)	Even if people are difficult, I can get them to change their behavior.	.18	.23	-.22	-.13
	Sub. (+)	If I find I can't do something, I simply ignore it.	-.21	-.17	.15	.21
	Sub. (+)	When I am exploring a strange place, I prefer to follow someone else.	-.13	-.17	.17	.17
III.	Dom. (+)	In a group of people, my opinions usually carry a lot of weight.	.10	.14	-.18	-.13
	Dom. (+)	I can usually get people to go along with me.	.10	.11	-.12	-.14
	Dom. (-)	I find that arguments upset me.	-.24	--	--	.20
	Sub. (-)	When I make plans, I usually can make them work.	--	.24	--	-.20
	Sub. (+)	I have always felt that the best way to contribute to an effort is to do things exactly by the book.	--	--	.19	.17
IV.	Sub. (+)	I tend to be easily influenced by people who speak with conviction.	--	-.13	--	.09
	Sub. (+)	In cases of conflict, the best thing to do is give in.	--	--	--	.25

* Rank ordered by sum of control and support scores.

** Correlations reported with $p \leq .10$, controlling for previous experience with Game of Risk.

the items composing the Dominant and Subordinate scale and their relationships to observed behavior. The items are rank ordered by the sum of the correlations for both control-seeking and support-seeking behavior, which was considered to indicate the relative validity of the items.

The first two Dominant items (Group I) are characterizations of *behaviors of self*. These items are the most strongly related to observed behaviors and each measure was as strongly related to these behaviors as the whole Dominant scale. These items thus seem to capture the most basic characteristics of Dominant predispositions, which are predispositions to direct, forceful and authoritative behaviors. Group II also contains characterizations of behavior of self, but includes *responses of self to difficulties*. The Dominant item in this group implies that Dominant behavior (direct, forceful, and authoritative) is expected to have the consequence of eliminating difficulties with others. The Subordinate items in this group imply that difficulties are eliminated by avoidance or avoided by following others.

The subsequent groups of items are less strongly and less consistently related to the observed behaviors. All of the Dominant and Subordinate measures in Group III refer to *expected consequences of behaviors of self*. The negatively-scored Dominant item ("arguments upset me") refers to emotional consequences of behaviors of self and others. Obviously, responses to these items depend on environments as well as behaviors. Group IV consists of Subordinate items which refer to *expected consequencies of behaviors of others*. The content of these items imply that Subordinate behavior predisposes individuals to change behavior in response to conflicts with others, which is consistent with eliminating or avoiding difficulties.

This analysis thus indicates that predispositions were best measured in terms of behavioral responses to difficulties and conflicts with others. Dominant predispositions appear to be defined by expectations to behave directly, forcefully, and authoritatively with the consequence that difficulties with others may eliminate changing their behaviors. The characteristics of Subordinate behavior are not as sharply defined; however, the available data suggest that persons who behave subordinately expect to avoid difficulties by following others and by changing their own behaviors.

Variation in Responses to Items. Table 6-2 indicates that distributions of responses of students and elderly subjects differed least for items from the Dominant scale (1 and 3) and one item from the Subordinate scale (2) which describe *expected behaviors of self*. Responses to other items indicated that the *expected relations to others* varied between samples more than expected behaviors. There was more variation in distributions of responses for measures of expected relations to others in the Subordinate scale than those in the Dominant scales. Very similar distributions were also obtained for items from the scales included in the environmental preference study (see Table E-1, Appendix E). These patterns of distributions of responses in three samples indicate that roughly the same proportion of people in populations that varied in educational, occupational, age, and generational characteristics were predisposed to Dominant and Subordinate behaviors, but expectations with regard to relationships with others varied.

Comparison of differences in distributions of responses with regard to the latter items revealed that elderly persons with some college education agreed as frequently or more frequently as students with statements from the Dominant scale that indicated that they expected to control their personal relations with others in response to difficulties. There was, however, little difference between college-educated and all elderly in their frequency of agreement with statements from the Subordinate scale that indicated that they expected to change their plans, behaviors, and opinions when they experienced difficulties. This pattern of variation is consistent with the interpretation that expected relations with others may vary with educational, occupational, age, or generational differences.

Definition of Predispositions. The foregoing analysis indicates that predispositions may be defined in terms of stimulus-response relationships, as follows:

Predispositions	Stimuli	Responses
Dominant	Difficulties and conflicts	Direct, forceful, authoritative behaviors

Table 6-2

Comparison of Percentage Agreement with Subordinate and Dominant Items by Student and Elderly Respondents

Scale (Scoring)	Item	% Agreement (S) Students (AE) All Elderly (CE) College Educated Elderly	% Differences in Response	
			1*	2**
Dom. (+)	1. I speak in an authoritative manner.	S 60 AE 60 CE 57	0	-3
Sub. (+)	2. When I am exploring a strange place, I prefer to follow someone.	S 67 AE 60 CE 67	-7	0
Dom. (+)	3. People think of me as a direct and forceful person.	S 60 AE 48 CE 62	-12	+2
Dom. (+)	4. Even if other people are difficult I can get them to change their behavior.	S 55 AE 32 CE 54	-23	-1
Dom. (+)	5. In a group of people my opinions usually carry a lot of weight.	S 36 AE 46 CE 62	+10	+26
Sub. (+)	6. I tend to be easily influenced by people who speak with conviction.	S 66 AE 34 CE 35	-32	-31
Dom. (-)	7. I find that arguments upset me.	S 34 AE 74 CE 27	+40	-7
Sub. (+)	8. If I find that I can't do something, I simply ignore it.	S 88 AE 46 CE 43	-42	-45
Sub. (+)	9. In cases of conflict the best thing to do is give in.	S 94 AE 41 CE 78	-43	-22
Sub. (+)	10. I have always felt that the best way to contribute to an effort is to do things exactly by the book.	S 95 AE 49 CE 54	-46	-41
Dom. (+)	11. I can usually get other people to go along with me.	S 24 AE 70 CE 78	+46	+58
Sub. (-)	12. When I make plans I can usually make them work.	S 9 AE 82 CE 83	+73	+74

* % difference in response between Students and All Elderly.
**% difference in response between Students and College Educated Elderly.

Predispositions	Stimuli	Responses
Subordinate	Strange places (which are difficult)	Follow others (implicitly their directions and examples)

This conceptualization of predispositions broadens their definition slightly beyond the scope of the content of the items for which response distributions were stable across samples. The words "difficult" and "directions" were not included in the "following others" item, but the general pattern of the items imply such a stimulus and responses.

The available data indicates that behavioral predispositions may be normally distributed, but virtually unrelated to one another. The best measures of Dominant and Subordinate predispositions (the "direct and forceful" and "following other" items) were uncorrelated with one another ($r = .00$). It is assumed, therefore, that the degree of predisposition to one behavior varied relatively independently of the degree of predisposition to the other behavior. If predispositions are also normally distributed, it would be expected that few individuals would be predisposed only to Dominant or Subordinate behavior, as indicated in Figure 6-1.

Concepts of Orientations

Given the foregoing conceptualization of predispositions, it is apparent that the Subordinate and Dominant scales developed in this research measure both predispositions and expected relationships to others. The term "orientation" aptly describes the latter measures. This term permits the analytical distinction between predispositions, defined in terms of expected behavioral responses, and orientations, defined in terms of expected relationships. Two types of orientations are implied by the measures in this research. The first type of orientation may be defined as "personal orientation" because the measures which define this type of orientation seemed to be related to variation in degree to which personal goals are expected to be attained.

Personal Orientations. In the student sample factor analysis, the predisposition to direct and forceful behavior was related to expectations of personal control over relations with others. For the elderly

Figure 6-1

Conceptualization of Predisposition Types, Assuming Normal Distribution of Strengths of Predispositions and Independence of Predispositions

		Dominant Predispositions		
		Strong	Moderate	Weak
Subordinate Predispositions	Strong	Highly Improbable	Probable	Highly Improbable
	Moderate	Probable	Highly Probable	Probable
	Weak	Highly Improbable	Probable	Highly Improbable

sample as a whole, however, this predisposition was related to expecting lack of personal control over relations of self to environment. This is indicated by comparison of the factor analyses of both samples (see Chapter II, Table 2-3 and Appendix E, Table E-3, Factor 3). These data thus indicate that the predisposition to direct and forceful behaviors was systematically related to variation in the degree of personal control over relations to environments which were expected. This variation in orientation thus tends to substantiate the interpretation that the direct and forceful item represents an appropriate measure of the predisposition to seek personal control over relations with environments.

This predisposition was also related to rejection of the social norm of conformity, as indicated by the second highest loading item in the factor. Working class occupational background was also positively related to this factor. This implied that the elderly did not expect personal control because previous occupations demanded conformity which conflicted with personal control from direct and forceful behavior (see Tables E-3 and E-4, Appendix E). Demands for conformity have been found to be related to working class occupations (Kohn, 1977).

In the factor analysis of the student sample, the predisposition to follow others was related to expecting to change plans, behaviors, and opinions in response to difficulties. High scores on the Subordinate scale were also related to observed support-seeking behaviors. Thus, changing plans, behaviors, and opinions in response to difficulties was related to overtly seeking personal support. The concept which appears to explain the relationship of this personal orientation to support-seeking is personal dependence. For college students, for example, expecting to change plans, behaviors, and opinions in response to difficulties may result from depending on the personal directions and examples of teachers in making "correct" responses to classroom questions, tests, and examinations which are difficult. The predisposition to follow others was also empirically related to wanting personal direction and wanting to follow the examples in others in the college student sample (see Table E-5, Appendix E). Thus, this orientation appears to be related to expecting others to determine how to respond to difficulties and expecting to receive this type of personal support.

As the predisposition to follow others was related to this orientation for students, this implies that the goal of this behavior is to personal support. Accordingly, as the elderly also less frequently agreed with items which indicated this orientation, it must be inferred that they less frequently expected personal support. *The term "personal support" implies having personal direction and examples to follow. This indicates that the goal of Subordinate behavior may be defined as personal dependence on others, which is more clearly indicated by the term "personal support" than the more generic term "social support."*

The item measuring predisposition to follow others was not, however, contained in any of the factors in the elderly analysis. This was related to the poor discriminant validity of the factors (see Table E-3, Appendix E). The Subordinate predisposition item was also weakly correlated with many other items rather than strongly correlated with a few other items: out of the 23 strongest correlations of the following others item with others items, 17 were in the .19 and .10 range, and only two correlations exceeded .30. However, the predisposition to follow others was strongly correlated with four factors: Factor 2 ($r = .62$, $p < .001$), Factor 4 ($r = .55$, $p < .001$), Factor 6 ($r = .63$, $p < .001$) and Factor 7 ($r = .49$, $p < .001$). These particular factors had the least discriminant validity of all factors, with intercorrelations between .54 and .72. The predisposition was thus related to variable and indiscriminant orientations. While the factors which define these orientations were vague, the content of the items composing the factors were consistent with the assumption that the elderly with the predisposition to follow others did *not* expect personal support and believed that they should be independent and competent, as defined by conventional social norms.

Social Orientations. The poor discriminant validity of the factors in the elderly sample appears to be related to the presence in the respondents of a pervasive social orientation. Social orientations may be defined as attitudes and beliefs about *desirable* relationships to environments as distinguished from expected relationships to environments, which represent personal orientations. The items which were common to most factors indicated that these respondents *believed* that they should be independent, self-reliant, personally competent, and effective in their responses to environmental demands. The factors in the student study did not indicate the presence of this social orientation.

While the elderly appeared to consider independence to be highly desirable, it is well-established that elderly people tend to be more environmentally-dependent than younger people. Assuming that this sample of elderly respondents were also environmentally dependent, the factors suggest that this social orientation to independence may be reaction to environmental dependence. The orientations items suggest that the effect of environmental dependence on personal orientations varied with behavioral predispositions. For example, the predisposition to direct and forceful behavior was related both to rejecting conformity and to expecting lack of personal control; thus, environmental dependence may interact with Dominant predispositions to prevent personal control by increasing social pressures for conformity. The items in the four factors (2, 4, 6, and 7) related to the predisposition to follow others suggest that environmental dependence may interact with this predisposition to reinforce conformity to rules. Rejection and acceptance of conformity thus appears to be related to Dominant and Subordinate predispositions respectively. The fact that variation in social orientations took the form of variation in attitudes about conformity appears to be related to the predominantly working class social composition of the elderly sample and possibly the generation of the respondents.

Definition of Orientations. The variability of orientations which has been found in this research should be expected from the original concept of behavioral predispositions. The working hypotheses was that the consequences of goal-directed behaviors may vary. This appears to result in the formation of systematic expectations with regard to expected consequences of behaviors. In this perspective, therefore, the Dominant and Subordinate scales appear to measure behavioral patterns in which goal-attainment is expected. In the Dominant Behavioral Pattern, the predispositions to direct, forceful, and authoritative behavior are related to orientations in which personal control is expected; in the

Subordinate Behavioral Pattern the predisposition to follow others is related to orientation in which personal support is expected. These behavioral patterns are diagrammed in Figure 6-2. For the elderly sample as a whole, these predispositions were not related to the same orientations as were found for the student sample; however, elderly with the same predispositions as students appear to have the same personal goals, and those elderly with similar personal experiences to students may have had similar orientations, according to their predispositions. Therefore, the structure of relationships between predispositions and orientations, may be defined in terms of the following conceptualizations:

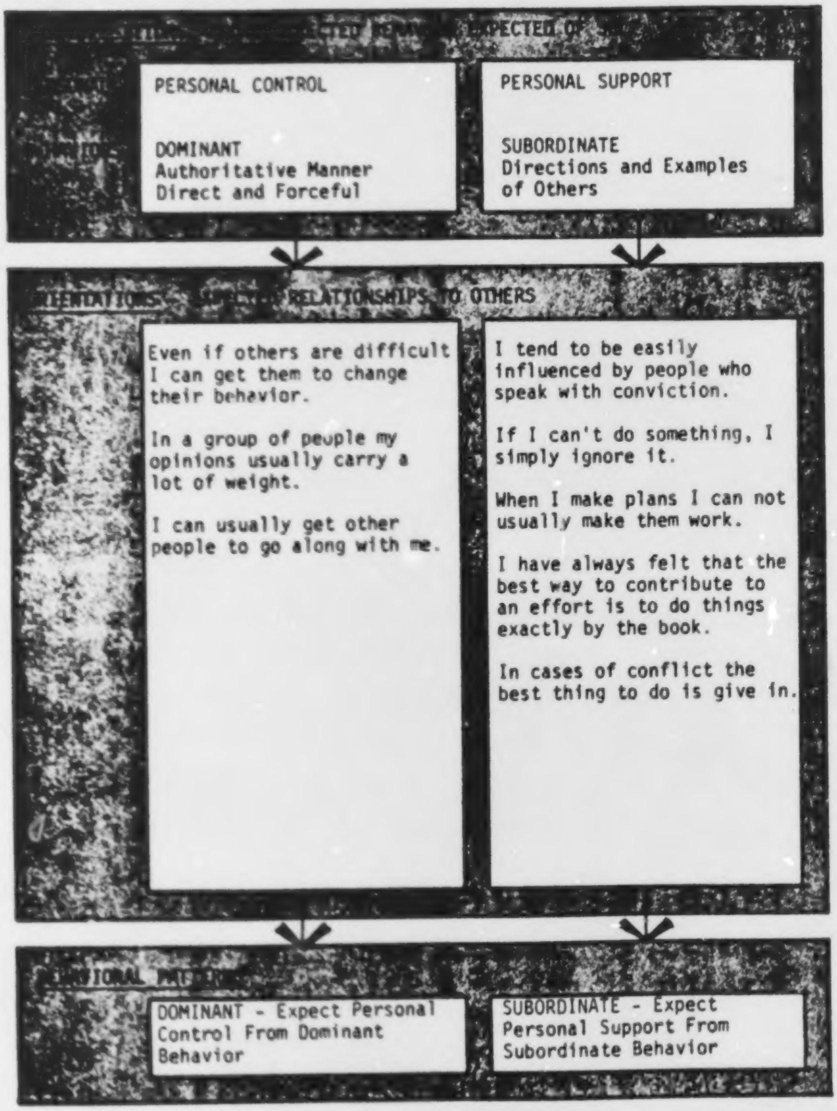
Behavioral Patterns	Predispositions (S-R)	Orientations (C)
Dominant	Direct, forceful, and authoritative behaviors, with goal of personal control	Variation in degree of personal control as a consequence of environmental variation
Subordinate	Follow personal directions and examples of leaders, with goal of personal support	Variation in degree of personal support as a consequence of environmental variation

Variation in orientations is assumed to be a consequence of differences in personal experiences between persons with the same behavioral predispositions, and these differences are assumed to be consequences of previous environments. The age, social class, and generational characteristics of the elderly subjects in this study suggest major differences from students in their personal experiences that may be related to differences in their previous environments, and interactive effects with behavioral predispositions.

First, there appears to be an effect of age and personal experience on personality. Over time, the interrelations of behavioral predispositions with personal orientations increase if personal control is expected. This is indicated by the fact that Likert scaling produced a higher coefficient of reliability for the Dominant scale in the elderly sample than the student sample (.85 to .70). This is consistent with

Figure 6-2

Dominant and Subordinate Behavioral Patterns



PERSONAL CONTROL

DOMINANT
Authoritative Manner
Direct and Forceful

PERSONAL SUPPORT

SUBORDINATE
Directions and Examples of Others

Even if others are difficult I can get them to change their behavior.

In a group of people my opinions usually carry a lot of weight.

I can usually get other people to go along with me.

I tend to be easily influenced by people who speak with conviction.

If I can't do something, I simply ignore it.

When I make plans I can not usually make them work.

I have always felt that the best way to contribute to an effort is to do things exactly by the book.

In cases of conflict the best thing to do is give in.

DOMINANT - Expect Personal Control From Dominant Behavior

SUBORDINATE - Expect Personal Support From Subordinate Behavior findings of other research with elderly that indicate that personality differences increase with age. This effect is more subtle for Subordinate predispositions and implied by the predisposition to follow others. This predisposition would logically be expected to result in variation in behavior in response to how others behave, or situation-specific behavior. In fact, the predisposition to follow others is positively related to response-specificity (see Tables E-6 and E-7, Appendix E). Thus, the behavioral predisposition to follow others was related to a variety of factors in the elderly sample, implying situation-specific orientations, and the Alpha coefficients of reliabilities were very poor for the Subordinate scale (.23 to .60). The implication of these data is that Dominant predispositions may interact with environment over time to increase personality integration while Subordinate predispositions may interact with environments over time to decrease personality disintegration.

Second, there appears to be an effect of social class. This effect is indicated by the fact that the Alpha indices of reliabilities for both the Dominant and Subordinate scales were nearly comparable for elderly with similar educational and occupational backgrounds to students, varying only about .07. The effect of social class was particularly strong in the factor analysis, as indicated by correlations of working class occupational backgrounds with the factors, and the predominantly working class background of the sample (see Tables E-1 and E-4, Appendix E). In this case, Dominant predispositions and personal control orientations appear to be related to middle class status and Subordinate predispositions and personal support orientations appear to be related to working class status. While none of the samples in this research had an appropriate social composition for a direct test of this hypothesis, comparison of correlations of predisposition and orientation measures to indicators of social class status suggest a comparable relationship of Dominant and Subordinate scores to social class indicators as Self-Direction and Conformity scores (see Table E-8, Appendix E).

Third, there appears to be an effect of generational differences in social attitudes which cannot be disentangled from the effects of social class in this study. The predominantly working class elderly sample

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defined their orientations to a greater extent in terms of conventional social norms and social attitudes about authority. The students define their orientations to a greater extent in terms of attitudes about personal relations. This raises the question of whether the student subjects in this research were less oriented to conventional social values that were manifest in the factor analyses of the elderly sample because of generational differences affecting attitudes about authority.

Behavioral Determinants

The objective of developing measures of predispositions and what has been defined as orientations was to predict goal-directed behavioral responses to environments. As this research is concerned with the effects of urban environments on personal well-being, and these effects are conceived to arise from failure to attain personal goals, Dominant and Subordinate scales represent the conceptually appropriate measures of goals and behaviors. The question which remains, however, is the relative importance of the predispositions and orientations measured by these scales in determining behavioral responses.

As indicated by the findings reported in Table 6-3, the strength of relationship of single Dominant and Subordinate predisposition measures to observed behaviors, on the average, is nearly as strong as the relationships of measures of each behavioral patterns to observed behaviors. When the relationship of both scales to observed behaviors were controlled for these predispositions, the variance in summary ratings of observed behaviors which could be accounted for by the scales was reduced substantially. About one-fourth of the variance in summary ratings could be explained by the remaining measures in the Dominant scale. Upon reflection, however, it is apparent that all the variance could not be eliminated by controlling for this predisposition unless Dominant predispositions were perfectly measured. Given some measurement error, and given the interpretation that orientations represent variation in degrees of attainment of goals of Dominant behavior, and therefore must in some manner measure indirectly the effect of predispositions, the results are consistent with the interpretation that these measures of Dominant predispositions might predict observer classification of individuals as predisposed to seek control.

Table 6-3

Simple and Partial Correlations of Dominant and Subordinate Scales
and Predisposition with Measures of Observed Behaviors

Behavioral Patterns and Predispositions Measures	Relationships to Observed Behaviors: Control		Support	
	Rating	%	Rating	%
Dominant Scale	.34***	.26***	-.29***	-.28***
Predisposition to Direct and Forceful Behaviors	.25***	.29***	-.24***	-.30***
Dominant Scale, Control for Predisposition	.19**	.13*	-.15*	-.13*
Dominant Scale, Control for Orientation	.25***	-.16**	-.18**	-.11
Subordinate Scale	-.16**	-.23***	.13*	.24***
Predisposition to Follow Others	-.13*	-.17**	.17**	.17**
Subordinate Scale, Control for Predisposition	-.09	-.16*	.02	.17**
Subordinate Scale, Control for Orientation	.04	.00	-.04	.02

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

This interpretation is further supported by the relationships of Dominant scale to observed behavior when controlling for Control orientation. Despite the fact that only a single item was used to measure Dominant predisposition, the relationship of the scale, removing the variance attributable to orientation, to behavior type summary rating was as strong as the single item. The relationship of Dominant scale to percentage emission measures of Dominant behavior was, however, reversed, so that it was negatively related to observed control-seeking behavior.

This latter finding indicated that the judgement of observers as to the degree of certainty that a person was a control-seeker depended on whether the person was predisposed to direct and forceful behaviors. As the raters were also observers who coded behavioral emissions, and made their ratings with knowledge of the emissions of each individual, this finding indicated that type rating was independent of behavioral emission data. As type rating was a classification judgement, this finding indicated that predisposition had a qualitative effect on behavior. Expectations of getting personal control had an independent quantitative effect, measured by the relative frequency of overt emissions of control-seeking behaviors. These findings suggest that this orientation had a reinforcing function.

The statistical effect of controlling for the Subordinate predisposition to follow others was, however, inconsistent with the interpretation that predisposition type could be predicted independently of percentage emission of support-seeking behaviors. This finding may, however, been affected by two conditions. First, support-seeking behavioral emission were far less frequent than control-seeking behavioral emissions, with the result that the judgement of predisposition type often had to be made on the basis of one or two behavioral emissions. Independence of qualitative judgement from quantitative effects could not, therefore, be expected. Second, Subordinate behavior may predispose individuals to behave according to directions and examples provided by others so that the predisposition to follow others and the orientation to change behaviors, plans, and opinions both should be related to indeterminant plastic behaviors. Thus, even though the predisposition may determine behavior type and the orientation may have a reinforcing function, the effects are not distinguished so that they can be disentangled.

Redefinition of Behavioral Predispositions

The foregoing analysis suggests that the original concepts of behavior in this research has considerable construct validity. Behavioral predispositions have been more precisely defined as expected behaviors of self, including especially responses to difficulties with environments. As expected, behavioral predispositions appear to account for the variation in types of observed behavior and personal goals. The concepts which best describe the behaviors to which individuals are predisposed are the concepts of Subordinate and Dominant behavior.

Behavioral predispositions are related to personal orientations in behavioral patterns in which expected behaviors of self (stimulus-response) are paired with expected relations with others (consequences). Variations in previous environmental experiences may result in variation in relations with others which are expected to result from behavior (personal orientation). These expectations may represent cognitions formed as a consequence of previous contingencies of goal-directed behaviors, but whether the contingencies are rewarding or aversive appears to be determined by behavioral goals. Orientations may predict variation in degree of overt expression of goal-directed behaviors, and the stimuli which elicit and, therefore, control these behaviors. Orientations thus may represent effects of extrinsic motivation. The degree to which Dominant or Subordinate overt behavior is expressed may be affected by previous reinforcement, and therefore may be predicted from orientations; but the degree of overt expression does not appear to affect intrinsic motivation to seek personal control or personal support. In summary, therefore, the best bet for developing measures which will predict whether responses to urban environments are directed to personal control or to personal support is to continue to refine measures of behavioral predispositions. The research suggests that similar predispositions are present in populations with very dissimilar orientations and roughly to the same degree.

Percentage emissions of behaviors were inversely related to one another (r = .86). However, the predispositions to direct and forceful behaviors and to follow others were uncorrelated with one another (r = .00). As only slight to moderate differences in relative predisposition to each behavior would be expected from distributional assumptions (see Figure 6-1), this suggests that slight differences in relative predisposition to either behavior may have the consequence of major differences in degrees of expression of either behavior.

The form of measurement of predispositions and orientations required individuals to agree or disagree with statements which characterized their behaviors. This form of measurement may have considerably understated the relationships between predispositions and overt behaviors. The effect of the predominance of predispositions would be best measured in terms of relative expected frequencies of behaviors, as indicated by the inverse relationship of percentage emissions of behaviors.

Personality Variation

The foregoing analysis suggests that variation in personal orientations may affect the frequency or amount of behaviors, but not the type of behaviors and the goals to which behaviors are directed. Variation in orientations may therefore explain differences in behavior between persons with the same behavioral predispositions, and differences between predispositions may explain the dichotomous structure of orientations. Dichotomies in social attitudes may develop from the effect of seeking difference goals in structuring attitudes on dimensions of control or support.

Intercorrelations of Orientations

Self-Direction-Conformity and Locus of Control were two dichotomously-defined orientations that were measured in research with student subjects. The intercorrelations of Dominant and Subordinate scale scores with these measures of orientations were to determine the relationships of these orientations and these behavioral patterns (see Table 6-4).

Table 6-4

Correlations of Dominant and Subordinate Scales with Measures of Self-Direction, Locus of Control and Their Components

Orientation Measures and Components	Dominant Scale	Subordinate Scale
Self-Direction Orientation[1]	.14*	-.21**
Self-Conception Items	.16**	-.26***
Social Orientation Items	.09	-.10
Self-Confidence Item	.26***	-.20**
Self-Deprecation Item	-.25***	.28***
Locus of Control Orientation[2]	.12*	-.04
Internal Control Items[3]	.19***	-.03
External Control Items[4]	-.03	.16**
Dominant Scale	--	-.23***

[1] Measured by nine items which, in each case, represented the highest loading item in Self-Direction factors identified by Kohn (1978).

[2] Measured by eight items from I-E Scale developed by Rotter (1966), with three items slightly modified to refer to behavior of self rather than beliefs about behavior generally. Scored positively toward internal control.

[3] Measured by three unmodified items from Rotter's I-E Scale.

[4] Measured by two unmodifed from Rotter's I-E Scale.

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

N = 251 (Student Sample)

The correlations were not strong, but this must be discounted. First, only a few items were used to measure Self-Direction, Conformity and Locus of Control out of the large number which are considered to be measures of these orientations. Second, these orientations are defined by values and attitudes that may vary independently of personal goals. For these reasons, the consistency rather then the strength of the correlations represents the best indicator of the validity of the hypothesis.

The findings reported in Table 6-4 indicate that Dominant and Subordinate scale scores were significantly related to Self-Direction-Conformity measures and particularly to self-conception measures. The directions of the relationships suggest that the dichotomous structure of self-conceptions is related to different personal goals and expectations.

Locus of Control has been defined as a dimension by expectations that individuals may control relations to environment (Internal Control) and by expectation that the environment controls individuals (External Control). On this basis, it would be expected that Dominant score would be positively related to Internal Control and negatively related to External Control. This was not the case, and the reverse relationships to these measures were not found for Subordinate scores. The relationship of Dominant scores to Rotter Internal Control measures and of Subordinate scores to Rotter External Control measures was striking. Together with virtually no relationships of Dominant score to External Control measures and Subordinate score to Internal Control measures, the consistency of the relationships lends credence to the interpretation that these attitudes about relations to environment may develop from personal goals. Only five Rotter items were used in the study, which may account for the weakness of these quite consistent relationships.

These findings suggest, therefore, that Conformity and External Control were related to predispositions to seek personal support and the expectations of attaining this goal, and Self-Direction and Internal Control were related to predisposition to seek personal control and the expectation of attaining it. It has not been previously suggested, to our knowledge, that Conformity and External Control were related to predispositions to seek personal support and the expectation of attaining this goal; rather, Conformity and External Control has been viewed as the absence of personal control, which implicitly assumes that persons with these orientation seek personal control, but fail to attain it. These findings suggest, however, that contrasting conceptions of the relation of self to environment, which have been conceptualized as dichotomous orientations, are related to the expectations of seeking and attaining different behavioral goals.

Self-Direction and Conformity

Orientations to Self-Direction and Conformity are of particular interest in this study because measures of these orientations were found to be related to observed Dominant and Subordinate behaviors (see Chapter II). This raised the question of relation of these orientations to predispositions. An item analysis of these measures were carried out to identify measures that might represent predisposition.

As shown in Table 6-5, the items which account for the strongest relations between Self-Direction-Conformity and observed behaviors were measures of self-conceptions. Measures of social orientations did not contribute to these relationships. The most consistent relationships between these items and objectives indicators of Subordinate and Dominant behavior were for measures of self-confidence and self-deprecation.

As shown in Table 6-6, these measures of self-deprecation and self-confidence were also correlated with measures of Dominant and Subordinate predispositions while the social orientation item was unrelated to predisposition. This suggested that the interpretation that these orientations were products of two influences: Dominant and Subordinate behavioral patterns, which contribute to forming self-conceptions, and processes of socialization, which are unrelated to these behavioral patterns and affect relationships to friends and authority.

Item analysis suggested that socialization inhibits spontaneous expressions of Dominant and Subordinate behavior. Inhibition is implied by the negative relationships of both control-seeking and support-seeking behavior to differing frequently in ideas and opinions from friends (items 4). This relationship was found only for measures of percentage of these behaviors, implying low emission of these behaviors.

Table 6-5

Comparison of Relationships of Self-Direction-Conformity Items to Observed Support-Seeking and Control-Seeking Behaviors*

Items Kohn's Classification of Items	Relationships to Behavior				
	Self Direction	Control		Support	
		Rating	%	Rating	%
Self-Conception					
1. I wish I could have more respect for myself.	-	-.33	-.23	.25	.31
2. I take a positive attitude toward myself.	+	.29	.30	-.20	-.24
3. Are you generally one of the first persons to try something new or do you wait until you see how it's worked out for other people.	+	--	--	-.22	--
4. How often do your ideas and opinions differ from those of your friends?	+	--	-.19	--	-.19
5. How often you feel that you are about to go to pieces?	-	-.20	--	--	--
Social Orientation					
6. It is important to teach children absolute obedience.	-	--	--	--	--
7. Most people can be trusted.	+	--	--	--	--
8. When things go wrong, how often do you blame yourself?	+	--	--	--	--
9. It's all right to do anything you want as long as you stay out of trouble.	-	.23	.20	-.26	-.20

*Correlations reported are significant at the p ≤ .10 level, and are controlled for previous experience with game of RISK.

Table 6-6

Intercorrelations of Selected Predisposition* and Orientation** Scale Items

ITEMS		PREDISPOSITIONS			SELF-DIRECTION AND CONFORMITY ORIENTATIONS					
		Authoritative Manner	Dominant Direct and Forceful	Subordinate Follow Others	Self-Confidence 2	1	Personality Integration 5	Try Something New 3	Relationship to: Friends 4	Authority 9
Self-Confidence	2	.22	.17	-.20	--					
Self-Deprecation	1	-.11	-.01	.15	-.44	--				
Personality Disintegration	5	-.22	-.08	.19	-.32	.30	--			
Try Something New	3	.30	.21	-.42	.24	-.15	.11	--		
Relationship to Friends	4	-.02	.30	-.11	.00	-.04	-.06	.17	--	
Relationship to Authority	9	.04	.11	.00	.04	.00	-.09	.19	.00	--

*Complete language of Dominant and Subordinate predisposition items can be found in Tables 6-1 and 6-2.
**Self-Direction and Conformity Orientation items can be found in Table 6-5.

The relationships of item 9 to Self-Direction and Conformity suggest that inhibition may stem from internalized norms (it is *not* all right to do anything you want as along as you stay out of trouble) in Self-Direction and from external norms in Conformity (it is all right to do anything you want as long as you stay out of trouble). However, the relationship of item 9 to observed behaviors indicates that doing what you want is related to control-seeking behavior and not doing what you want is related to support-seeking behavior. On theoretical grounds, defined previously in this chapter, it would be expected that doing what you want would be related to Dominant behavior and not doing what you want would be related to Subordinate behavior. Therefore, in view of the fact that observed Dominant was positively related to Self-Direction, and observed Subordinate behavior was positively related to Conformity, it was suggested that, in fact, Self-Directed persons are *predisposed* to do what they want, and Conforming people are *predisposed* not to do what they want.

Doing what you want and not disagreeing with friends (related to Dominant behavior) and staying out of trouble and not disagreeing with friends (related to Subordinate behavior) may be conceived to promote informal social control and integration at the small group level of organization. As this would conflict with formal control over behavior by hierarchical authority, by substituting personal and group goals for organizational goals, it is logical to infer that socialization for occupational roles might inhibit these behaviors.

This suggests that persons oriented to Self-Direction and Conformity are predisposed to Dominant and Subordinate behaviors respectively, but direct these behaviors to the attainment of authoritative goals and inhibit spontaneous behaviors directed to personal goals when conflicts occur with authoritative goals.

Responses to pre-game and post-game questionnaires by students indicate that these behavioral patterns were related to Self-Direction and Conformity. As indicated in Table 6-7, Self-Direction was related to academic achievement, as measured by Grade Point Average. This implied that Self-Directed persons identified with authoritative goals (i.e., academic goals in a university). Second, Self-Direction was not

Table 6-7

Correlations of Selected Indicators of Goals and Behavioral Patterns with Orientation Indicators

Goals and Behavioral Pattern Indicators	Orientation Indicators[1]		
	SD/Conf.	Dominant	Subordinate
Goals			
Grade Point Average	.19**	--	--
Amount of pressure at university	--	-.20**	.11
Perceived control over game.	--	.25***	-.13*
Perceived control over the game, controlling for actual number of armies.	.27***	.25***	-.13*
Self-Control			
Agree things piling up on me.	-.11	--	.11
Agree worried about things not being done on time.	-.19**	--	.19**
Agree isn't enough time to get things done.	-.24***	--	--
Agree too many people making demands on me.	-.29***	--	--
Self-Expression			
How much subject would like to continue playing the game.	--	.14*	--
How long subject would like to play the game ideally.	--	.16**	-.13*
Agree other people are not really interested in me.	--		.24***
Agree feel awkward and out of place.	-.24***	-.13	.22

[1] Pearson correlation coefficients at $p \leq .10$

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

related to wanting to continue the game, but it was related to indicators of self-control over relations with environments, particularly use of time, which presumedly contributed to academic achievement. Third, Self-Direction was related to perceived control over the game only when variance related to objective game success was partialed out. This indicates that Self-Directed persons evaluated control over the game in terms of criteria unrelated to game success. Thus, Self-Direction was related to personal identification with authoritative goals, inhibitation of spontaneous activities, and use of time to attain authoritative goals. This behavior is appropriate for preparation for middle class professional and managerial roles, as would be expected from Kohn's research (cf., Kohn, 1977). In contrast, and also consistent with Kohn's findings, Conformity was related to both academic problems and lack of self-control, consistent with the inappropriateness of this orientation for middle class occupations; however, concern with time pressures indicated strong identification with authoritative goals.

Personal Control and Support Orientations

As measured by the Dominant scale, Control orientation was related to indicators of desire to continue to play the experimental game for a long time. As the game was designed to elicit spontaneous behaviors directed to personal control, this response indicated that persons oriented to Control desired to continue this spontaneous goal-directed activity in the middle of an academic term. As they also did not perceive pressures in the university environment, despite their average level of academic achievement, their desire to continue suggests that they did not identify with authoritative academic goals. Yet there was no difference in enjoyment of the game between Self-Directed and Control oriented persons, indicating that the game was equally rewarding to both groups. Control oriented persons, however, perceived the game to give them personal control, although they were not, in fact, more successful by objective criteria of game success than Self-Directed persons. This perception of personal control did not depend on success in terms of official goals of the game.

As indicated by Subordinate scale score, Support orientation was related to not wanting to play the game for a long time. This response appears to be related to their feeling awkward and out of place and that people were not interested in them. The game was deliberately designed so that directions were ambiguous and experimenters were not present in the room to give personal directions after the game began.

These responses to questionnaire items indicate that Control and Support orientations were related to direction of behavior to personal goals and to spontaneous behavior. These data tend to substantiate the previous interpretation of the relationships of items 4 and 9 to observed behavior that Self-Direction and Conformity inhibit spontaneous behaviors directed to personal goals.

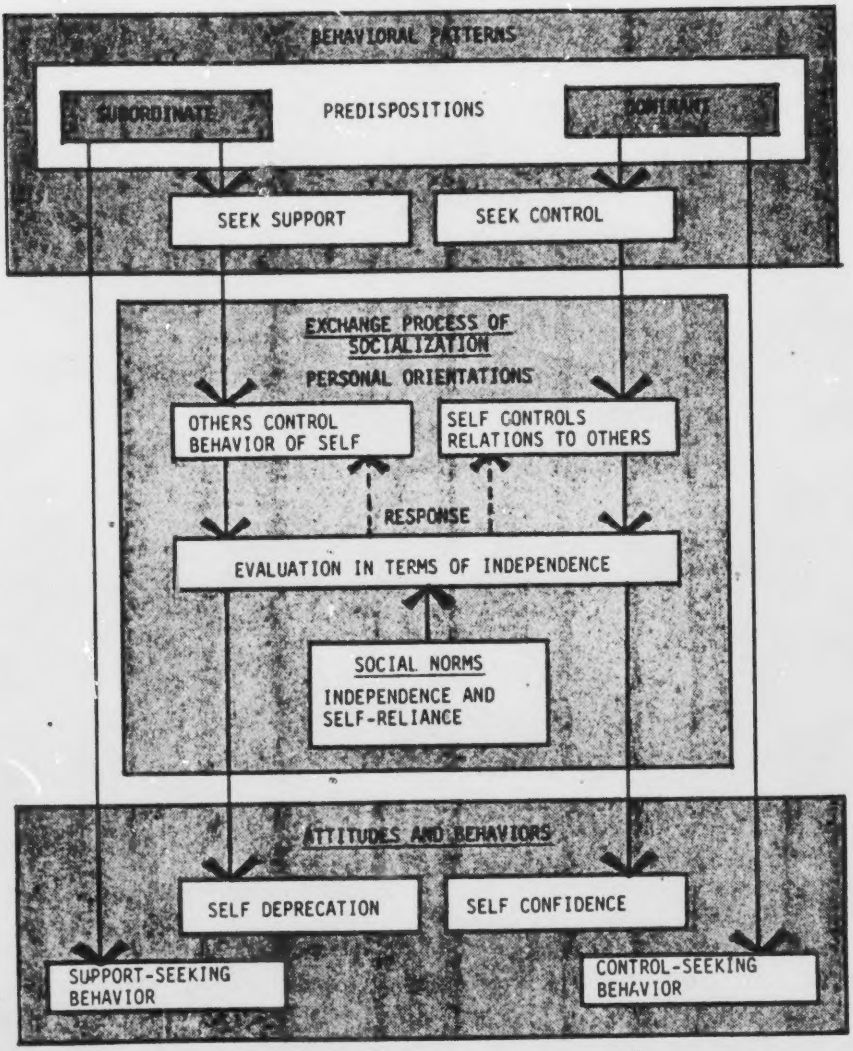
Psychological Effects

In general, therefore, both Self-Direction and Conformity represent orientations to self-control. This implies common social norms. As indicated by the findings in Chapter IV, it is reasonable to assume most individuals prefer "independence" over "dependence." These social norms are also consistent with the concept of self-control, specifically defined as inhibiting behaviors which conflict with authoritative goals. This suggests, therefore, that socialization for occupational roles imparts values of independence and self-reliance to persons who have developed orientations to Control and to Support. If this is correct, then Self-Direction would be related to self-confidence because it is related to the Dominant Behavioral Pattern, including the expectations of seeking and obtaining personal control. Conversely, Conformity would be related to self-deprecation because it is related to the Subordinate Behavioral Patterns, in which persons expect to seek and to obtain personal support, which is inconsistent with social norms of self-reliance and independence. The process of socialization by which this might occur is diagrammed in Figure 6-3.

It follows from this interpretation that the relationships of self-confidence and self-deprecation measures to observed behaviors, reported earlier, should depend on Dominant and Subordinate Behavioral Patterns. This inference was tested by determining the effects of controlling for Dominant and Subordinate scores on the highly significant and consistent relationships between self-confidence and self-deprecation measures and

Figure 6-3

Relation of Dominant and Subordinate
Behavioral Patterns to Self-Conceptions



observed behaviors. As reported in Table 6-8, the effects were to reduce substantially the significance and strength of these relationships. Control for self-confidence, self-deprecation, Dominant score, and Subordinate score only slightly reduced the relationships of Self-Direction and Conformity to observed behaviors. Dominant and Subordinate behavioral patterns are thus related to both self-conceptions and social orientations. Self-confidence and self-deprecation may be conceptualized as psychological effects of incongruence between these behavioral patterns and occupational social norms. As the intercorrelation of the combined scores for these measures with all nine measures of Self-Direction was r = .85, these psychological effects appear to differentiate Self-Direction and Conformity, which may develop from these behavioral patterns (as in Figure E-1).

Additional analyses were carried out to determine the effects of self-confidence and self-deprecation on environmental preferences. There were substantial differences between the preferences related to self-confidence and to self-deprecation and those related to Dominant and Subordinate behavior patterns (see Chapter IV and Appendix E, Tables E-9 through E-13). When compared with preferences related to Dominant predispositions (measures of Subordinate predispositions were not included in the environmental preference study), the general pattern was one of restriction in vertical (hierarchical) and horizontal (territorial) relations to the environment, as graphically represented in Figure 6-4.

Refinement of Concepts

The findings of the research reported in this section indicates, therefore, that personality orientations affect individual adaptations to urban environments. The findings suggest that socialization for occupational role as measured by Self-Direction and Conformity, directly affects response to work environments and thereby indirectly affects response to home environments. The general effect appears to be that authoritative goals take precedence over personal goals. For this reason, hierarchical authority defines functions which are the source of adaptive demands (cf., Chapter III). This tends to result in the work environment determining adaptive demands.

Table 6-8

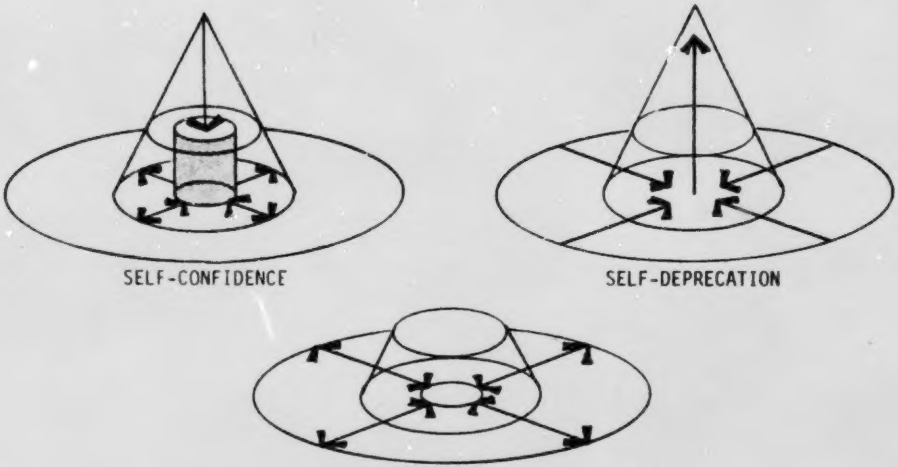
Simple and Partial Correlation Coefficients for Relationships of Self-Direction-Conformity Measures to Observed Behaviors

Orientation Measures	Relationships to Observed Behaviors			
	Control		Support	
	Rating	%	Rating	%
Self-Direction-Conformity	.29***	.20**	-.29***	-.29***
Self-Confidence Item	.29***	.30	-.20	-.24
Self-Confidence Item, Control for Subordinate Scale	.13*	.10	-.09	-.07
Self-Confidence Item, Control for Dominant Scale	.08	.09	-.05	-.06
Self-Deprecation Item	-.33	-.23	.25	.31
Self-Deprecation Item, Control for Subordinate Scale	-.10	.03	.09	.12*
Self-Deprecation Item, Control for Dominant Scale	-.08	.01	.07	.13*
Self-Direction-Conformity				
With Control for Self-Confidence and Self-Deprecation Items	.23***	.18**	-.22***	-.20**
With Control for Dominant Scale	.25***	.17**	-.22***	-.23***
With Control for Subordinate Scale	.15*	.26***	-.21***	-.23***

* $p \leq .01$
** $p \leq .01$
*** $p \leq .001$

Figure 6-4

ENVIRONMENTAL SPATIAL STRUCTURE

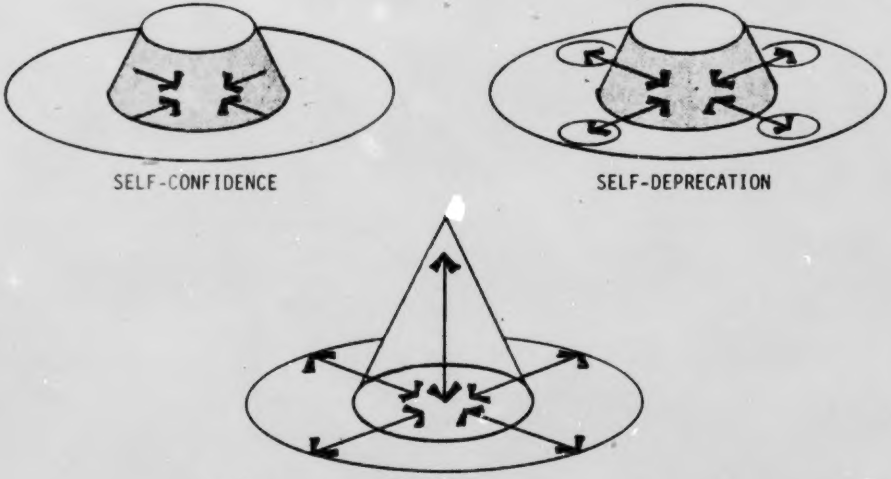


SELF-CONFIDENCE

SELF-DEPRECATION

DOMINANT

Environmental Systems Related to Work Preferences



SELF-CONFIDENCE

SELF-DEPRECATION

DOMINANT

Environmental Systems Related to Home Preferences

It follows that the home environment serves the function of adapting the demands of the work environment as well as the home environments because of this social orientation. This degree to which the home environment performs this function depends on the degree to which the work environment facilitates the attainment of personal goals. The findings of this research indicate that the work environment did not usually perform this psychological function for the subjects of this study. Because the work environment also generates psychological needs, the home environment must not only facilitate the attainment of personal goals of personal control and personal support, but also the satisfaction of psychological needs. It does not follow, however, that needs will be satisfied in the home environment. It is, therefore, very possible that satisfaction of needs will be sought in community environments, such as civic clubs, hobby groups, and other private associations. It would also be expected that privacy needs that are not satisfied in home and community environments might be sought in the work environment. Cluster analysis suggests that this was one of the adaptations which occurred (cf., Chapter IV).

Personal Control and Personal Support

The foregoing analysis provides a basis for redefining the concepts of goals of Dominant and Subordinate behavior.

Redefinition of Concepts

The original definition of personal control was control over personal transactions with environments, with lack of personal control designated as social press. The results of scale development suggested, however, that the concept of social press is inappropriate. (See Chapter V, Conclusions) The refined concept of Dominant behavior developed in this chapter indicates that the goal of direct, forceful, and authoritative behaviors is to control the behaviors of others in responses to difficulties and conflicts with the environment. Therefore, failure to attain the goal of Dominant behavior is not a state of social press, but rather is a state of personal incompetence, ineffectualness, or powerlessness. It is appropriately defined by the items which indicate this state in Factor 3 in the elderly factor analysis (Table E-3, Appendix E).

The original concept of social support was also reexamined in the light of the conceptual refinements in this chapter. First, it became apparent that social support was an imprecise definition of the goal of Subordinate behavior. As indicated by the analysis in this chapter, the goal of persons with Subordinate predispositions, as measured by a preference for following others, is personal support. This interpretation was further substantiated by reexamination of the contents of the scale which best measured social isolation (see Chapter V). The content of these items clearly indicates that social isolation is a phenomenon in which people feel that no one is interested in them as persons. This interpretation was further substantiated by the evidence, reported in Chapter IV and in previous sections of this chapter, that impersonal relationships at work, which are defined by rules prescribed by authority, is related to negative effects on the personality of persons with Subordinate predispositions.

These conceptual refinements suggested that the concept of social support needed redefinition. The findings of this research indicates that both predispositions to Dominant and Subordinate behavior are positively related to desire for social relations with others that are supportive. Dominant predispositions are, however, related to preferences for affiliations with others which meet needs for affection, which is consistent with the concept of social support as a social network and as personal friendship. Subordinate predispositions were related to preferences for a homogeneous and private association with groups with common values.

It follows that the effects of personal control and personal support on susceptibility to illness may depend on whether: (a) personal goals are attained in response to adaptive demands, and (b) whether appropriate types of supports are available to meet needs resulting from failure to attain goals. The effects of urban environments on health thus may not depend entirely on either whether personal goals are attained or whether social supports are available, but depend instead on behavioral goals, their attainment, psychological needs resulting from failure to attain goals, and the availability of appropriate types of supports to meet these needs.

Validation of Concepts

The validity of these concepts of behavioral goals and social supports was tested by determining whether the relationship of variables measuring these characteristics were consistent with the foregoing propositions. According to the findings in this chapter, it would be expected that characteristics of the work environment would be related to degree of attainment of personal goals and characteristics of the home environment would be related to degree of social support. In the sample of elderly people, measures of previous occupation, behavioral predispositions, personal control and social isolation, type of social supports, and functional impairment were available (see Appendix E). It was also found in this sample that measures of pre-retirement occupational status and socio-economic status were related to variation in functional impairment. As few of the elderly were still employed, the relationship of occupational status to functional impairment could be interpreted as the effect of previous work environments, using occupational status as surrogate measure for work environment. The measures of social support, developed by Leveton in this study, were designed to measure present degree and type of support; however, as most of the elderly in this sample were long-term residents of the urban areas, and social support was measured in terms of stable relationships, it was reasonable to assume that the present degrees and types of supports were consistent in general with past supports, at least for the purposes of validating concepts.

Predispositions and Occupational Status. The sample was dichotomized into two occupational groups which were equivalent, in general, with working class and middle class occupations. Occupations composing working class and middle class groups were similar in those used by Kohn (1977) in his studies of the relation of occupational status to Self-Direction and Conformity. These measures of occupational status were cross-tabulated with measures of functional impairment, controlling for

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predispositions to direct and forceful, authoritative, and following behaviors. The values resulting from this analysis were then plotted. As indicated by Figures 6-5 and 6-6, predispositions to direct and forceful behaviors interacted with occupational status to increase the relationship between occupational status and functional impairment, but the relationships for predispositions to follow others was more additive than interactive. The findings for predispositions to an authoritative manner were similar, but less strong, to those for direct and forceful predispositions.

Predispositions and Social Supports. The measures of social support had been factor analyzed by Leveton to form three composite measures of social networks. A fourth individual measure was defined as a measure of degree of reciprocity in confidence sharing. Social supports were measured in terms of current relations with others.

The same procedures were employed to determine whether these measures of social supports interacted with behavioral predispositions that had been employed to determine the interactions of predispositions with occupational status. Certain strong interactions were identified (see Figures 6-7, 6-8, 6-9, and 6-10). The findings tended to substantiate the concepts that affiliation and privacy were related to different behavioral goals via predispositions and performed supportive functions. Direct and forceful predispositions interacts to the greatest degree with measures of social supports. If need for affiliation originates from effects of work on Dominant predispositions, then the facts that direct and forceful predispositions interacted both with occupational status and social supports to the greatest extent was consistent with this conceptualization.

In addition, the types of social supports with which these predispositions interacted were generally consistent with the types of supports that would be expected from previous analysis. Direct and forceful predispositions interacted to the greatest degree with two types of social support. One measure (Figure 6-7), which was derived by factor analysis, defined social support in terms of social network consisting of friends rather than family and relatives, social contacts outside the home, face-to-face communications, and a social network in which members

Figure 6-5

Class Occupations - Direct and Forceful Interaction

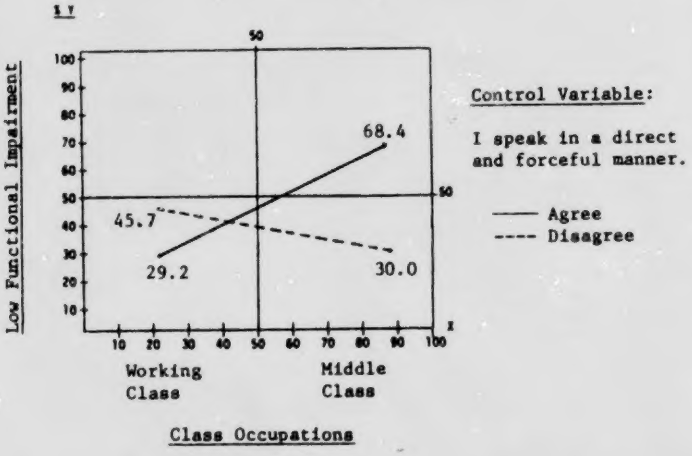


Figure 6-6

Class Occupations - Prefer Follow Others Interaction

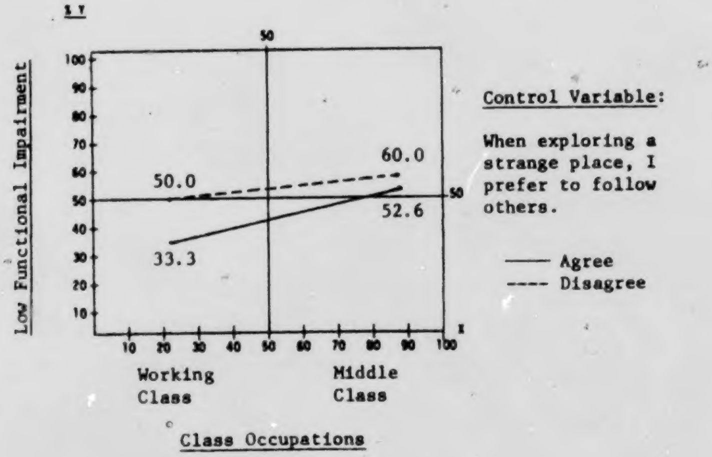


Figure 6-7

Community Friendship Network - Direct and Forceful Interaction

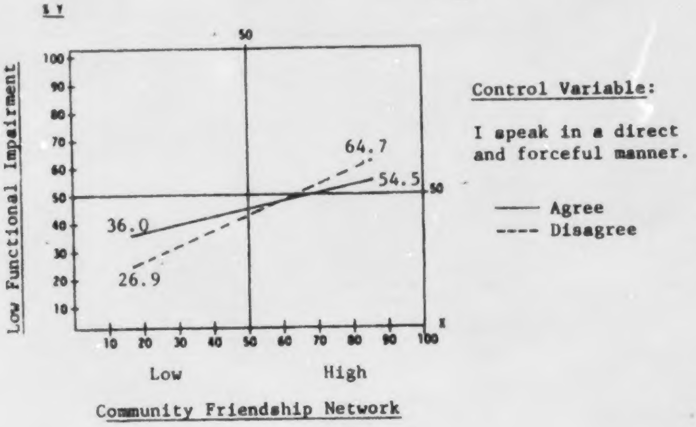


Figure 6-8

Close Personal Reciprocity - Direct and Forceful Interaction

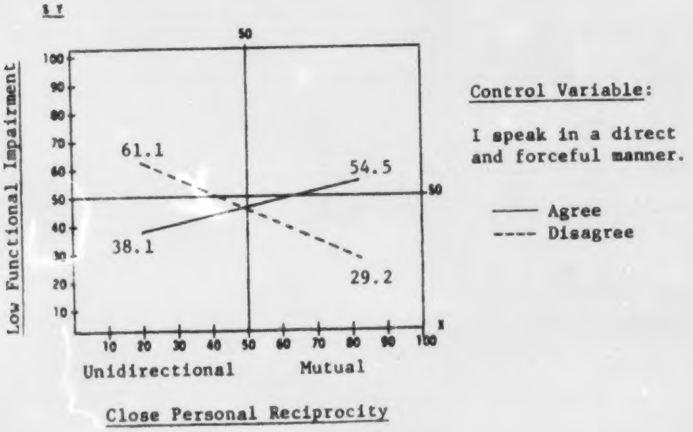


Figure 6-9

Restricted Home-Centered Network - Prefer Follow Others Interaction

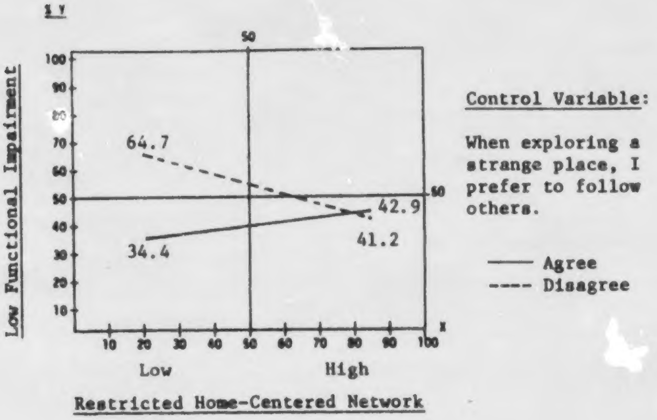
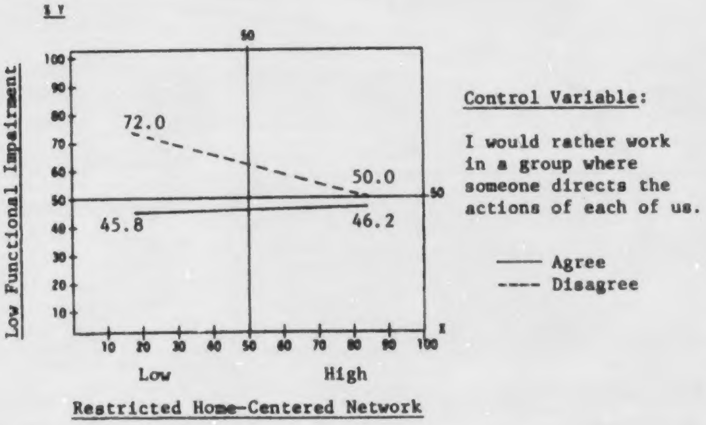


Figure 6-10

Restricted Home-Centered Network - Prefer to Work in a Group Where Someone Directs Interaction



did not know each other well. This was consistent with the type of affiliations related to Dominant Behavioral Pattern, as indicated in Chapter IV: high social contact outside the home over the broad range. The other measure of social support which interacted with direct and forceful predispositions defined social supports in terms of reciprocity in confidence sharing, which was consistent with the home-centered affilition by persons oriented to personal control preferred by Self-Directed persons (see Table 6-8) and with collaboration with one or two people at home, which was related to Dominant Behavioral Pattern. In contrast, the predisposition to follow others interacted with a different measure of social support, which was defined by factor analysis to consist of social relations in which personal contacts was frequent, members were located in the proximal environment and were easily accessible, and written contact was infrequent. This type of support was consistent with the preference for privacy found to be related to Subordinate Behavior Pattern in Chapter IV. The interaction in this case suggested, moreover, that this kind of social network had only a slight positive relation to good health for persons with predispositions to follow others, suggesting that this adaptation was relatively ineffective in compensating for deprivations of respect for self; however, this type of adaptation had a much more positive effect for persons with this predisposition than persons without it (Figure 6-9). An additional analysis was carried out, using predispositions to work under a group under personal direction as a measure of predisposition. This item had the highest loading in the most discriminant factor in the elderly study which appeared to most approximate the concept of Conformity (see Factor 1, Appendix E), which seemed to be a basis for behaviors at work which form needs for privacy. A similar interaction was found to the previous one (see Figure 6-10).

The results of this analysis were, therefore, consistent with the concepts that community friendship networks and close personal reciprocity were supportive for persons with Dominant predispositions. Restricted home-centered networks were not so much related to good health for persons with Subordinate predispositions as they were not related to variation in health, suggesting a buffering function.

Working Class Occupation and Functional Impairment. As the foregoing analysis suggested that lower occupational status interacted with direct and forceful predispositions to increase the relationship of occupational status to health, the working hypothesis was formulated, based on the findings of this research, that this interaction resulted in lack of personal control and need for affiliations. Therefore, it would be expected that variation in perceived personal control and in availability of social networks might explain much of the variance in functional impairment for persons of lower occupational status.

The findings of this regression analysis (see Table 6-9) indicated that variation in perceived personal control and in community friendship networks accounted for a substantial proportion of the variance in functional impairment for persons of lower occupational status and direct and forceful predispositions. These variables accounted for little of the variance in functional impairment for persons of high occupational status and direct and forceful predispositions. Furthermore, the findings indicated that variation in community friendship networks was related to functional impairment primarily for persons of working class occupational status, and this effect, as indicated by Beta weights for personal control and network variables was interactive.

Middle Class Occupation and Functional Impairment. The results of the previous regression analysis suggested that social support for persons with direct and forceful predispositions and higher occupational status may be provided by close personal reciprocity. This type of support is consistent with preferences for restricted affiliations related to Self-Direction. A second regression model was developed to determine the relation of variation in personal control and close personal reciprocity to functional impairment (see Table 6-10). For persons of middle class occupational status and direct and forceful predispositions, variation in close personal reciprocity, as defined by confidential relations, was related to variation in functional impairment. The reversal of the signs for the simple correlation and the Beta weights for personal control indicates that personal control substantially interacted with close personal reciprocity. However, close personal reciprocity had little relationship to variation in functional

Table 6-9

Regressions of Direct and Forceful Predispositions, Personal Control, and Community Friendship Network Variables on Functional Impairment

Set of Respondents Independent Variables	Multiple R	R^2	R	Beta
All Respondents				
Direct and Forceful Predispositions	.09	.01	.09	.07
Lack of Personal Control	.15	.02	.13	.19
Community Friendship Networks	.32	.10	-.25	-.32
Direct and Forceful/Community Friendship Networks	.32	.10	-.18	.04
Direct and Forceful and Low Occupational Status				
Lack of Personal Control	.23	.05	.23	.32
Community Friendship Networks	.48	.23	-.36	-.42
Direct and Forceful and High Occupational Status				
Lack of Personal Control	.07	.01	-.07	-.05
Community Friendship Networks	.10	.01	-.09	-.07

Table 6-10

Regressions of Direct and Forceful Predispositions, Personal Control, and Confidence Sharing Variables on Functional Impariment

Set of Respondents Independent Variables	Multiple R	R^2	R	Beta
All Respondents				
Direct and Forceful Predispositions	.09	.01	.09	.15
Lack of Personal Control	.15	.02	.13	.14
Close Personal Reciprocity	.15	.02	-.04	.04
Confidence Shairing/Direct and Forceful	.20	.04	-.04	-.16
Direct and Forceful and Low Occupational Status				
Lack of Personal Control	.23	.05	.23	.24
Close Personal Reciprocity	.25	.06	-.07	-.08
Direct and Forceful and High Occupational Status				
Lack of Personal Control	.07	.01	-.07	.08
Close Personal Reciprocity	.35	.13	.35	.38
Direct and Forceful and Low Occupational Status				
Expected Personal Control	.15	.02	-.15	-.14
Close Personal Reciprocity	.15	.02	.08	.04
Direct and Forceful and High Occupational Status				
Expected Personal Control	.12	.01	.12	.27
Close Personal Reciprocity	.43	.18	.35	.44

impairment for persons of lower occupational status and direct and forceful predispositions.

An additional regression model was developed (see Table 6-10) in which expected personal control (Control orientation) was substituted for lack of personal control. Beta weights for this variable indicated that this personal orientation interacted with close personal reciprocity to result in relatively high conditional probabilities that both variables together would account for much of the true variance in functional impairment for persons of high occupational status and direct and forceful predispositions. The results for the working class occupational group were similar, but indicated greater differences from middle class occupational groups than in the previous analysis.

Conclusions. This analysis indicated that the refined concepts of personal control and personal support developed in this chapter have construct validity. The findings are also consistent with the findings in other sections of this chapter and previous chapters. Behavioral predisposition measures interacted with surrogate measures of occupational environments and with measures of social supports in a manner which is consistent with the relationships of these predispositions to environmental preferences and to social class-related orientations. The analysis also indicated that variation in personal control and in social support had interactive relations. These variables appear to account for relationships between social class and functional impairment found in the elderly study, but due to technical computer problems which have not yet been resolved, the regression analysis which appears to be indicated this conclusion is incomplete and not reported. In addition, there is considerable evidence to suggest that social isolation interacts with restricted home-centered networks to account for variation in functional impairment, but this analysis is also not complete.

Summary: Conceptual Integration and Assumptions

Revised Conceptual Model

This analysis of research findings in this chapter refines the definition of the variables and their relationships in the original conceptual model for this research (see Chapter I). The concepts which emerge are consistent with original working hypotheses, but additional variables and relationships have been identified. The revised conceptual model is presented in Figure 6-11.

Behavioral Predispositions. The findings of this research suggest that predispositions may explain the relationships of urban environments to illness, as proposed in working hypotheses. The research findings indicate that predispositions to Dominant behaviors are predispositions to direct, forceful, and authoritative behaviors and predispositions to Subordinate behaviors are predispositions to follow the personal directions and examples of others.

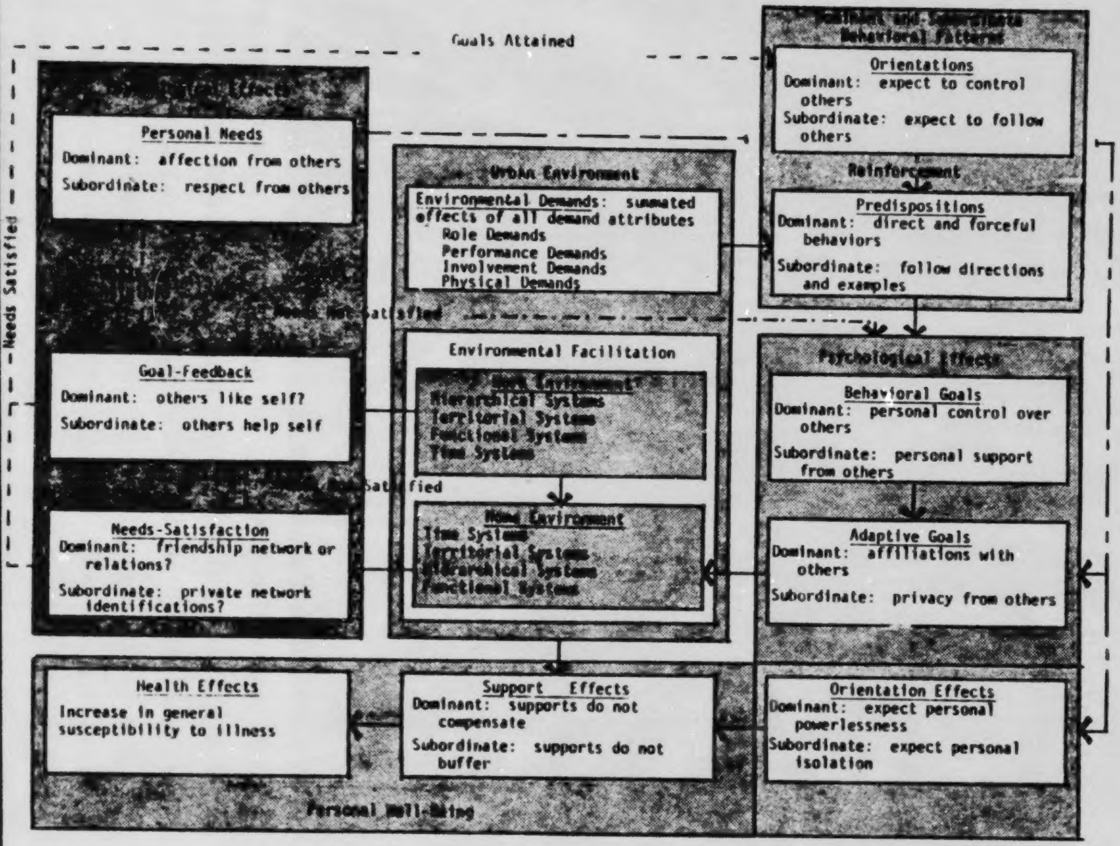
Although speaking in an authoritative manner appears to represent a Dominant predisposition, the findings of interaction analysis indicated that the predisposition to direct and forceful behaviors is sufficient to predict the variance in functional impairment that may be accounted for by this predisposition. Similarly, the predisposition to work in a group under personal direction (which seems to be related to Conformity) appears to interact with environmental variables and isolation similarly to the predisposition to follow others, but the latter definition of Subordinate predispositions appears to account for all the variance which is related to the former definition of these predispositions.

Behavioral predispositions are conceived to determine behavioral goals. The critical variable by which behavioral predispositions are related to urban environments is defined in terms of goal-attainment. Goals may not be attained because the urban environment inhibits the overt expression of Dominant and Subordinate behavior or frustrates these overt behaviors from attaining their goals. Conceptually, however, both these effects are attributable to the urban environment; therefore, regardless of how the urban environment prevents attaining intrinsic goals, the linkage of urban environment to behavioral is goal-attainment.

Urban Environments. The findings of this research indicate that goal-seeking responses (overt or not) are elicited by difficulties and conflicts with others. Adaptive demands in general are also conceived to be stimuli eliciting goal-seeking responses. The analysis in this chapter indicates that social role demands should be added to the list of adaptive demands identified in Chapter IV. In particular, demands

Figure 6-11

Revised Conceptual Model


Goals Attained
Behavioral Patterns
Orientations
Dominant: expect to control others
Subordinate: expect to follow others
Personal Needs
Dominant: affection from others
Subordinate: respect from others
Urban Environment
Environmental Demands: summated effects of all demand attributes
Role Demands
Performance Demands
Involvement Demands
Physical Demands
Reinforcement
Predispositions
Dominant: direct and forceful behaviors
Subordinate: follow directions and examples
Needs Satisfied
Needs Not Satisfied
Environmental Facilitation
Work Environment
Hierarchical Systems
Territorial Systems
Functional Systems
Time Systems
Psychological Effects
Goal-Feedback
Dominant: others like self?
Subordinate: others help self
Behavioral Goals
Dominant: personal control over others
Subordinate: personal support from others
Not Satisfied
Needs-Satisfaction
Dominant: friendship network or relations?
Subordinate: private network identifications?
Home Environment
Time Systems
Territorial Systems
Hierarchical Systems
Functional Systems
Adaptive Goals
Dominant: affiliations with others
Subordinate: privacy from others
Health Effects
Increase in general susceptibility to illness
Support Effects
Dominant: supports do not compensate
Subordinate: supports do not buffer
Orientation Effects
Dominant: expect personal powerlessness
Subordinate: expect personal isolation
Personal Well-Being

for Conformity appear to be related to powerlessness for direct and forceful persons; and, while there is no direct evidence of a comparable effects of demands for Self-Direction on persons predisposed to follow others, this is assumed.

The research indicates that it is likely that responses to work and home environments are determined by the summative effects of all adaptive demands experienced in all environments. In general, most adaptive demands found in this research appear to originate from the work environment, but the exploratory interviews reported in Chapter IV indicate that adaptive demands may also originate in the home environment from care for dependent children, disabled persons, or even care for self when disabled and living alone.

Because most adaptive demands originate in the work environment, the revised conceptual model assumes that the general pattern for urban populations is to respond initially with goal-seeking to work demands in the work environment. Because work environment tend not to facilitate attaining personal goals, failure to attain goals tends to have three kinds of effects: personal needs for affection and respect, adaptive goals of affiliation and privacy, and orientation effects of powerlessness and isolation. Regardless of whether goals are attained, however, it is also conceived that adaptive demands also elicit goal-seeking in the home environment.

For these reasons, the home environment may not only serve the function of facilitating the attainment of behavioral goals, but also the function of satisfying psychological needs resulting from work experiences. If the home environment is unable to satisfy these needs, then it is assumed that satisfaction of these needs is sought in the work environment. Therefore, if neither work nor home environment provide personal friendship networks and reciprocal relations for control-seeking persons, or private personal networks and personal identifications for support-seeking persons, then the conceptual model assumes that this results in lack of personal support. If, however, the home environment provides these social supports, this is assumed to compensate for powerless, or to neutralize isolation; but if the home environment does not provide these social supports, the conceptual model assumes that the work environment may not perform this function adequately. Thus, the conceptual model assumes that recursive cycles of work-home adaptations determine the relation of the urban environment to personal well-being.

Personality Orientations. The conceptual model assumes that if individuals do obtain personal control or personal support in their behavioral interaction with their work environments, goal-attainment results in feedback which reinforces behavior. This results in personal expectations that goal-directed behaviors will either have the consequences of control over others or others providing directions and examples to follow, which reinforce behaviors to which individuals are predisposed, and forms Dominant or Subordinate Behavioral Patterns. If these individuals do not attain their personal goals in responses to work environments, but satisfy their needs for affection and respect by attaining their adaptive goals in home environments, this is conceived to have the same consequences. These consequences, therefore, appear to result in the pairing of personal behaviors with personal expectations, which may affect frequency of behaviors, and in turn, increases the probabilities of attaining behavioral and adaptive goals.

Susceptibility to Illness. Accordingly, the conceptual model assumes that behavioral predispositions, facilitative attributes, and psychological effects represent the variables which determine the relationships of urban environments to general susceptibility to illness. Although overt behaviors and personality orientations also are implicit variables in the conceptual model, these variables are conceived to represent consequences of the interactions of other variables. It follows from the conceptual model that the proportion of the variance in rates of illness attributable to environment factors does not vary with overt behaviors and personality orientations. Assuming some individuals expect personal control or support, and manifest overt control-seeking or support-seeking behaviors, they would not experience powerlessness and isolation if the environment did not prevent their attaining their behavioral or adaptive goals; assuming other individuals expect powerlessness rather than personal control, and expect isolation rather than personal support, and, therefore did not manifest overt goal-seeking behaviors, the conceptual model assumes that they would not be powerless or isolated if environmental attributes facilitated goal-attainment and needs-satisfaction. Thus, knowledge of variation in behavioral predispositions, facilitative attributes, and psychological effects are theoretically sufficient for epidemiological analysis of the relation of urban environmental attributes to susceptibility to illness. Determination of the validity of theoretical assumptions underlying the conceptual model is a separable problem, requiring identification of behavioral responses which link environmental factors to individual illness in causal processes.

Assumptions of the Conceptual Model

The relationships among the variables in the revised conceptual model, however, assumes that relationships found in this exploratory research will also to be found in other urban populations. This assumption must be qualified. The subjects of this research adapted to work and home environments in a particular pattern. Self-Direction or Conformity were preferred at work, and affiliation or privacy were preferred at home, and separation between the two environmental adaptations was maintained by time and space. This implied that authoritative goals took precedence over personal goals at work and personal goals took precedence over authoritative goals at home, resulting in compensating and buffering functions for home environments. Thus, the home-work relationship appeared to be Work-Home Separation, as indicated in Figure 6-12.

There is some indication in the data with regard to the environmental preferences related to Self-Direction and Conformity, however, that individual variation may occur in these environmental adaptations as a consequence of variation in personality orientation. This is indicated in the Work-Home Integration matrix shown in Figure 6-12. Because relatively few of the respondents in the environmental preferences study indicated by their responses that they often felt self-confidence or self-deprecation, this work-home adaptation appeared to be related to relatively extreme orientations to Self-Direction and Conformity in terms of the sample. From analysis of the content of the preference items related to these measures of orientations, it appears

Figure 6-12

Concepts of Variation in Work-Home Adaptations

Work-Home Separation

Personality

Predispositions	*Authoritative goals over personal goals*	*Personal goals over authoritative goals*	*Adaptations*
Dominant	Self-Direction	Affiliation	*Home affiliations compensate for work deprivations*
Subordinate	Conformity	Privacy	*Home privacy buffers from work deprivations*
	Work	Home	

Time Separation

Work-Home Integration

Personality

Identification with authoritative goals

Predispositions			*Adaptations*
Dominant	Self-Direction	Self-Control	*Self-control at home and at work*
Subordinate	Conformity	Conformity	*Conformity to different authoritative goals*
	Work	Home	

Work Controls Home

Work-Home Expression

Personality

Personal goals over authoritative goals

Predispositions			*Adaptations*
Dominant	Territorial Affiliation	Personal Influence	*Self-expression*
Subordinate	Territorial Privacy	Group Following	*Self-expression*
	Work	Home	

Home Controls Work

possible that the pattern of home preferences related to extreme self-confidence might be considered similar to the traditional Anglo-Saxon Protestant upper middle class and high personal achievement, and the pattern related to extreme self-deprecation may be similar to the traditional Eastern European Catholic working class and high personal alienation. The first pattern emphasizes the traditional nuclear family, and homeplace-centered activities, while the second pattern emphasizes the traditional extended family, and the homeplace linked with other familiar places. The pattern of preferences in both cases appears to be consistent with personal identification with authoritative goals; but while Dominant persons appear to identify with bureaucratic goals, Subordinate people appear to identify with family goals.

In this perspective, it seems possible that the samples used in this research reflected a work-home adaptation which is related to the contemporary middle class and perhaps lower middle class. While the samples used in exploratory research and in the environmental preference studies were heterogeneous with respect to social class characteristics, there were very few individuals who might be considered to fall into the categories of the traditional upper middle class and ethnic working class. The first limitation stems from the relatively small proportion of persons in the upper middle class in a small sample; the second limitation stems from interviewing outside highly industrialized areas.

These limitations of samples may, however, prove to be fortuitous, if the conceptual analyses in Figure 6-12 are valid. Work-Home Integration seems to depend on personal identification with authoritative goals -- or acceptance of moral authority. If moral authority is declining in this nation, as suggested by many studies, Work-Home Separation may represent the predominant adaptations of urban populations which are emerging.

It also follows, however, that this trend could result in the predominance of personal over authoritative goals at work, which was not the pattern in this sample. If this occurred, it seems possible that the pattern of adaptation would be for individuals to pursue their personal goals at work so that territoriality affiliation and privacy is used to protect personal autonomy and to resist social control by authority. At home, persons seeking personal goals for their own sake.

and not as a means of compensation or buffering for work deprivations, might manifest an expressive style of seeking personal influence or group support. In these adaptations, both work and home perform expressive functions -- as indicated by the Work-Home Expression diagram in Figure 6-12.

VII. CONCLUSIONS

The specific objectives of this research were: (1) to define concepts of behavioral predispositions and to develop measuring instruments, and (2) to refine concepts of urban environments and to develop measures of these attributes. These research objectives were accomplished, and established the conceptual and methodological basis for the second stage of research and applications to social problems.

Summary of Research Findings

Behavioral Predispositions

The working hypotheses of the research were that individuals seek personal control and social support in their behavioral responses to environments and that these behaviors resulted from predispositions to self-direction and conformity. It was assumed that the research would refine concepts of these predispositions and determine the best concept to explain these behaviors. Self-direction was assumed to be directed toward the goal of personal control and conformity was assumed to be directed to receiving social support.

Scale Development. The findings of the research established that measures of Self-Direction and Conformity developed by Kohn (1977) were related to observed support-seeking and control-seeking behavior, which was consistent with the working hypotheses; it was also found that Dominant and Subordinate scales, developed in this research, were even more strongly and significantly related to the observed behaviors than Self-Direction and Conformity. This involved several research accomplishments. First, the research established that the postulated behavioral patterns, derived from theory and not previously observed to our knowledge, could be observed and measured. Second, the research established that these observed behavioral patterns were highly significantly related to self-reported behaviors and attitude measures before the behaviors were observed. The identification of these highly significant relationships -- in the first attempt to measure both the predispositions and the overt behavioral patterns -- represent substantial evidence of powerful relationships between the two variables. The method of research does not take advantage of common methods variance which biases results toward higher significance than exists in reality.

The findings of multiple regression analysis also established that these measures, together with feedback variables in the conceptual model, accounted for a substantial proportion of the variance in observed behaviors, particularly control-seeking behaviors. After these variables were entered into the regression model, none of the social and personal variables measured in the research increased the variance which could be explained.

Despite these substantial relationships of measures to observed behaviors, the results of the research suggest that the relationships are even stronger than were found. First, the concepts of behavioral patterns and their determinants are much more refined as a result of the research, and these indicate that greater measurement precision is possible. Second, self-reported behaviors and attitudes were measured in terms of dichotomous "agree-disagree" measures, consistent with the working hypotheses that predispositions are dichotomous. The research suggests, however, that predispositions probably are not dichotomous and affect relative frequency of behaviors. For this reason, the "agree-disagree" form of items probably failed to measure main effects of predispositions and obscured the effect of relatively balanced predispositions to each behavior.

Refinement of Concepts. The research went beyond the requirements of the research plan in samplying an elderly population to determine their responses to items used in developing the Dominant and Subordinate scales. Analysis of variation in the distribution of responses to items in the Dominant and Subordinate scales provided additional clarification of concepts and measures. It was found that response distributions varied little for the items that most related to observed control-seeking and support-seeking behaviors in the student experiment. These items measured expected behaviors of self in response to difficulties.

This led to the conceptual refinement that predispositions were defined by expected behaviors and responses to difficulties. Expected and desired relationships which result from these behaviors were defined as orientations. The determinant of overt behavior were conceived to consist of: (1) predispositions, which determine goals, and (2) orientations, which reinforce behavior. Orientation vary with previous personal experiences more than predispositions. Dominant and Subordinate scales represent measures of behavioral patterns in which orientation reinforce goal-directed behaviors.

Behavioral predispositions were defined in terms of Dominant predispositions to direct, forceful and authoritative behaviors and Subordinate predispositions to follow the personal directions and examples of others. From analysis of variation in orientations related to behavioral predispositions, it was inferred that Dominant behavior is directed to the goal of personal control and Subordinate behavior is directed to the goal of personal support.

The predisposition to seek personal control, and the expectation of attaining this goal, is related to Self-Direction and to Internal Control. The predisposition to seek personal support, and the expectation of obtaining it, is related to Conformity and to External Control. These findings imply that these social orientations may develop from predispositions. In the proposal for this research, it was assumed that a variety of personality traits and behavioral patterns ". . . are situation-specific manifestations of the effect of two contrasting specific behavioral predispositions." The findings of this research provided consistent support for this assumption.

Urban Environments

The conceptual model for the research assumed that urban environments should be defined in terms of a generally-defined concept of settings for social functions. This concept was refined in three ways. First, library research identified possible facilitative attributes and established the distinction between demand and facilitative dimensions, as well as concepts of their interaction. Second, the urban environment was broken down into home and work environments with proximal and distal attributes. This provided a basis for a progressive measurement approach appropriate to the problem -- starting with the closest and most intimate environment and proceeding outward. This approach was applied in in-depth exploratory interviews with a socially heterogeneous sample of urban residents with high and low scores on measures of social press and social isolation and with varying predispositions. These yielded insights that permitted formulation of working hyptheses with regard to dimensions which may facilitate personal support or personal control.

Measurement of Attributes. These working hypothesis were then tested in methodological research with different subjects. Paired, forced-choice statements of environmental preferences were correlated with Dominant and Subordinate orientations and compared to working hypotheses. Only 51% of the measures discriminated preferences by dimensions, but this was not considered to be significant because the items were not restricted to those for which confidence was high. The significant finding was that 79% of the significant relationships of environmental preferences to predispositions were in the predicted direction. This indicated that the discriminant measures of preferences had much construct validity. Environmental preferences were conceived to measure facilitative attributes along separate dimensions of environment, imputed from environmental perceptions in exploratory interviews. From conceptual analysis of the content of items and their relationships, it was determined that the dimensions implied by the research findings represented hierarchical, territorial, functional, and time systems.

This methodological research thus defined attributes of environmental systems which are conceived to facilitate personal control and personal support. These attributes were defined in terms which are objectively measurable. This provides the methodological basis for subsequent studies to test operationally-defined hypotheses derived from the original conceptual model for this research program.

Concepts of Urban Environment. Home and work environments appear to perform two psychological functions: first, these environments appear to facilitate attaining behavioral goals in response to adaptive demands; second, these environments appear to satisfy psychological needs which develop from goal-directed behavioral responses to adaptive demands. In this research, the work environment appeared to be the primary source of adaptive demands, so that the home environment seems to be the primary place in which adaptations were sought in response to psychological needs. For this reason, there was some variation in the environmental conditions which were preferred in each environment. This pattern of work facilitating goal-attainment and home facilitating adaptation is related, however, to socialization for occupational roles and work role demands. Adaptive demands may arise also in the home environment, or the home environment may not satisfy adaptive needs, with the consequence that the satisfaction of psychological needs may also be sought in the work environment. The general concept is, therefore, that work and home are adaptive systems which are linked by the personality systems and which facilitate goal-attainment and needs-satisfaction.

Effects of Urban Environments

While it was not a formal objective of this project, this research also tested and refined concepts and measures of social isolation and social press. This resulted in conceptual clarification of both psychological states. Isolation was defined as a consequence of failure to obtain personal support from others. The concept of social press was replaced with the concept of powerlessness. Both isolation and powerlessness were found to be significantly related to variation in health by different measures.

The concept of social support was also redefined. Based on the environmental preference study, the concepts were developed that affiliations with others were sought by Dominant persons and that privacy from outsiders was sought by Subordinate persons. These were conceived to be forms of social support, with affiliations serving a compensation function and privacy serving a buffering function. Regression analyses supported these interpretations.

Refinement of the Conceptual Model

In the original proposal for this research (see Appendix A), the conceptual problem was defined as identifying behavioral responses which link urban environments to illness. The objectives of the research project were to refine concepts and to develop measures of behavioral predispositions and environmental attributes. The findings of the research relative to these objectives are summarized in Figure 7-1.

Applications

The findings of this research suggest concepts that may be applied to urban problems and issues which were not the targets of these exploratory and methodological studies. These will be briefly identified.

Social Class. Because Self-Direction and Conformity is related to social class, Kohn (1977), the relation of Dominant behavior to Self-Direction and Subordinate behavior to Conformity has implications for understanding the relationship of social class to behavior. The samples in this study were, however, inadequate to determine the extent of this relationship. The best available data was from the environmental preference study. The correlations of the predispositions and orientations measures to social class indicators were generally consistent with the interpretation that Dominant Behavior Pattern is related to higher social class rank and Subordinate Behavior Pattern is related to lower social class rank.

Urban Environments and Social Class. These relationships of Dominant and Subordinate Behavioral Patterns to social class imply a conceptual basis for the analysis of the differential effects of urban environments on social class groups. Both the structure and functions of occupational and residential environment may be understood in terms of adaptations related to predispositions and orientations defined in this research. Predispositions and orientations appear to have probabilistic relationships to social class rank. However, as predispositions are analytically independent variables from social class rank, this research provides a basis for analysis of both functional and dysfunctional adaptations in terms of both personal and social goals. The implication of the patterns of findings with respect to environmental preferences are that the structure and functions of urban neighborhoods may vary as a consequence of behavioral predispositions, personal and social orientations, and working conditions in places of

Figure 7-1

Summary of Refined Concepts and Measures

Concepts Developed in Research	Measures of Concepts
Dominant Behavior Pattern	Dominant Scale Behavior Observation Code
Dominant Behavioral Predispositions	Direct and forceful behaviors Authoritative manner of speaking
Personal Control Orientations	Degree of personal control over relations to environment
Goal of Personal Control	Inferred from variation in orientations
Subordinate Behavior Pattern	Subordinate Scale Behavior Observation Code
Subordinate Behavioral Predispositions	Prefer to follow others Prefer work in group under personal direction
Personal Support Orientation	Degree of personal direction of self by others
Goal of Personal Support	Inferred from variation in orientations
Urban Environment	
Functional Environments	Attributes of home and work
Levels of Environments	Proximal and distal attributes
Demand Attributes	Role, performance, involvement, and physical demands
Facilitative Attributes	Hierarchical, territorial, functional, and time systems
Demand Effects	Summation of work and home demand attributes
Facilitative Effects	Degree of attainment of personal goals
Personal Control	Powerlessness
Personal Support	Isolation
Supportive Effects	Degree of needs satisfaction
Affiliation	Community Friendship Networks Close Personal Reciprocity
Privacy	Restricted Home-Centered Networks
Adaptive Effects	
Compensation	Degree of affiliation compensates for powerlessness
Buffering	Degree privacy neutralizes isolation

employment. This suggests is that it may be possible to predict the structure and function of various types of neighborhoods from analysis of the distributions of behavioral and social attributes of populations.

Neighborhood Stability and Decline. It follows that it may also be possible to predict environmental conditions which lead to neighborhood decline from knowledge of predispositions and orientations. According to other analyses, the key factor in neighborhood decline is loss of confidence in the neighborhood. This research suggests that loss of confidence could occur from decline in expectations of personal control over relations to environments. This change in orientation might occur from loss of persons with Dominant predispositions by processes of residential mobility or changes in orientations of Dominant persons as a result of environmental changes. With such changes, it would also be expected that neighborhood control over the use of property, communication with city officials, social cohesion and community spirit, and leadership would decline. If the process continues to the point of depleting the neighborhood of Dominant persons, it would be expected that the remaining population would seek privacy and withdrawal from Subordinate predispositions.

Economic Inefficiency and Industrial Conflict. If such processes of neighborhood decline does occur as inferred, it would be expected that adaptive needs would be formed which may be difficult to satisfy in urban neighborhoods. It would also be expected that selective migration to suburban communities might occur in search of community affiliations that may be difficult to satisfy. If this is correct, the concepts developed in this research suggest that the satisfaction of psychological needs for privacy and affiliation will be sought in the work environment. It may be difficult to meet these needs in many work environments, with the result that privacy needs may generate conflicts over jurisdictional and supervisory issues between labor and management, and that affiliation needs may generate conflicts about territoriality among middle class bureaucrats.

Urban Environments and Well-Being. The foregoing discussion indicates that the relation of urban environments to illness and health may have major implications for urban problems. The processes that may be related to problems of social class, neighborhood decline, and economic inefficiency in metropolitan areas may also be processes that increase susceptibility to illness. The concepts of environment and behavior defined in this study suggest that all of these problems may be related to variation in behavioral predispositions which have not been fully recognized. It is thus possible that further research will yield multiple social benefits.

Theoretical Implications

The extent to which the findings in this research will permit major advances in understanding and solving urban problems depends on appraisal of the significance of the behavioral concepts defined by this study. The first is the concept of behavioral predispositions. It has been evidence from the beginning of this research that the concepts of predispositions to Dominant and Subordinate behavior were derived from observations of primate behavior in natural environments. To this extent, these concepts assume predispositions may have biological origins. This research did not, however, determine whether these predispositions have a biological basis. The entire analysis of behavioral predispositions in this study was carried out without any assumptions whatsoever about the biological origins of these behavioral predispositions. In this context, therefore, it is appropriate to observed that: (1) predispositions to Dominant and Subordinate behaviors were normally distributed in three samples of subjects with very different personal and social characteristics; (2) the behavioral predispositions were related to observed behaviors that were defined on the basis of models of primate behavior; (3) the behavioral predispositions were significantly related to differences in preferences for territorial and hierarchical relations which correspond, in many respects, to territorial and hierarchical relations observed in studies of primates; and (4) the relation of personal powerlessness to Dominant predispositions and to functional impairment, and the relation of social isolation to Subordinate predispositions and to severity of illness correspond to the phenomena that were previously inferred to explain the relation of illness to behaviors in animal experiments (cf. Griffin, 1974). Therefore, it is possible that predispositions to Dominant and Subordinate behavior are genetically transmitted and relatively unmodifiable characteristics which are found in all human populations and which represent sources of intrinsic motivation for behavior.

The second concept which is of general theoretical significance is that of personal orientation. This research suggests that personal orientations may develop from contingencies of reinforcement of goal-directed behaviors, with the consequence that persons vary in the degree to which they expect personal control or personal support. The relation of orientations to observed behaviors in the experiment in this research suggests that previous reinforcement affects the frequency or amount of expression of Dominant and Subordinate behavior. Thus, the findings of this research suggest that environment may influence the extent to which predispositions are expressed in overt Dominant or Subordinate behaviors by contingencies of reinforcement, but the reinforcing effect of contingencies varies with personal goals, as reflected in orientation. It follows that it is possible that the development and expression of Dominant and Subordinate behavior is dependent on contingencies of reinforcement, but this process may not affect the goals which persons are predisposed to seek -- only the frequency with which they seek to attain these goals by overt behavior.

Thus, if it is assumed that behavioral predispositions are relatively unmodifiable, it follows that overt behaviors may be constrained by goals to a limited range of adaptations. This assumption would have major implications for theories of social and personal integration, requiring acceptance of constraints on behavioral and environmental modification. This research did not, however, establish that this assumption is valid. It raises, however, the legitimate question of whether the patterns of findings are consistent with sociobiological theories of behavior. The answer to this question at this stage of research depends on the views of the reader.

Future Research

This research was only a first step in a planned program of research. The next step was conceived to be to test the predictive

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validity of the concepts and measures developed in this exploratory and methodological research. Because a rigorous approach to measurement has validated some propositions, the research has moved beyond the first stage; but none of the studies were conceived or designed to test hypotheses. In order to develop efficient and effective tests of hypotheses, certain further methodological investigations should be conducted.

Methodological Research

The research accomplished its first objectives of developing measures of behavioral predispositions and identifying measurable attributes of urban environments. Measurement has led to refined concepts. As a consequence, it has become possible to obtain even greater precision in measurement and this is likely to result in more decisive tests of hypotheses. Further small-scale laboratory studies to refine measures should, therefore, precede hypothesis testing.

The second research need is to determine the distributions of predispositions in various populations, and to identify possible variations in orientations with age, ethnicity, social class, religion, and sex. This is necessary to formulate specific hypotheses with regard to the effects of work and home environments on specific populations and therefore to apply the research. Although the predispositions and orientations of populations in each environment could be measured each time our environment was studied, this would limit generalizations of findings and both the development of theory and applications.

The third research need is to specify further objective environmental attributes related to behavioral predispositions and orientations. This may be studied in terms of populations or in terms of individuals, and at the corresponding levels of aggregated or individual behavior. From a methodological point of view, the first approach is appropriate for epidemiological analyses of urban environments, while the second approach defers application to urban problems for further verification of theory. Either approach is, however, suitable for both refinement of methods and hypothesis testing.

Hypotheses Testing

The findings of this research imply two possible research strategies for hypothesis testing. In the first strategy, the major research objective would be to determine whether hypotheses based on concepts and theories developed in this research explain variation in responses of urban populations to their environment. This objective and strategy requires a representative sample of a socially, culturally, and racially heterogeneous urban metropolitan populations to assess the distributions of predispositions and orientations and to determine their relationships to variation in responses to work and home environments. In such a survey, environmental perceptions could be compared with hypothesized preferences, and divergencies between perceived and hypothesized preferred conditions could be related to urban problems. By predicting these problems from the study of objective environmental conditions, hypotheses testing would identify criteria for environmental planning, design, and management for different populations.

In the second strategy, the major research objective would be to establish the causal connection between environmental attributes, overt behavior, behavioral predispositions, psychological effects and health consequences. In contrast to the extensive approach in the previous strategy, this strategy requires an intensive approach, focusing on individuals rather than populations. The main emphasis in this research should be upon understanding the phenomena of personal support and personal control and variation in their effects on health related to personality differences. This implies selecting individuals who are likely to be exposed to conditions affecting personal control and personal support and studying their behavior longitudinally in a quasi-experimental research design.

The first strategy is thus appropriate for proceeding as rapidly as possible to applications of concepts to the improvement of urban environments, while the second strategy is appropriate for identifying the connection between urban environments and health or illness. While the two strategies are complimentary in terms of the overall goals of this program of research, divergent research approaches are required. In the first research strategy, the effects of variation in urban environment attributes and behavioral predispositions on personal well-being would be investigated. The methods of research would be similar to those which are used in epidemiology. The objective would be to identify variation in environmental systems which are related to variation in aggregate well-being, applying a theory of behavior. The approach assumes that the concepts of behavioral predispositions may be applied to urban problems at this time.

In the second research strategy, the objective would be test and to refine theory. The methods of research would be comparable to those used in environmental psychological. The focus of investigation would be to identify the variables by which environmental attributes are linked to effects on individual well-being, assessing the predictive validity of a theory of behavior and refining personality variables.

Recommendations

Each strategy involves different benefits and costs. In the first strategy, the major benefit is immediate social application. In order to obtain application to urban problems, however, very large samples of both populations and environments will be required, and these will be very expensive. If samples are constrained severely by cost considerations, the research may loose its applicability, which would be its chief benefit. The issue in this research would be the degree to which the theory is useful for identifying environmental determinants of urban problems. Because the relation of urban environments to urban problems may be expected to vary with both environmental and behavioral characteristics, and these may vary with social characteristics of the population, it will be necessary to obtain a representative sample of both populations and environments to determine whether the theory has general application. If the sample is so restricted that it is not representative, further research may be necessary before general application is feasible and this would defer major benefits.

The first strategy, however, assumes that the theory of behavior developed in this research is sufficiently mature to apply, given certain further methodological studies in the initial phases of the research, which have been previously discussed. This involves risk. In order to minimize risk, controlled, longitudinal studies are needed to determine predictive validity. This requires time, but less cost. Major social benefits, if they exist, are deferred.

The objectives and methods appropriate for each research strategy are quite different. It is very unlikely then, that the two strategies can be combined into one research project. It is, therefore, recommended that both strategies be pursued in separate research projects. While it is recognized that theory needs further development, the highly consistent patterns of findings in this research suggests that application is now feasible. The application which appears appropriate at this time is the analyses of the aggregate effects of environmental variation in urban neighborhoods and industrial and business firms on the well-being of populations with different combinations of predispositions and orientations. The application requires prediction of aggregate effects of environment rather than full explanation of these effects in terms of specific behaviors. Further development of theory, however, is needed in order to lay the foundation for more powerful predictions and for validating causal inferences prior to any subsequent interventions that could adversely affect personal well-being. The choice depends on social goals and priorities and on attitudes about risk.

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APPENDIX A

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RESEARCH PROPOSAL

A. Introduction

(1) Objectives

The long-term goal of this research is to develop standards for planning and designing urban environments in order to promote well-being. This presents obviously complex research problems. Accordingly, a three-stage research design will be employed. This application is for funds to support only the first stage of exploratory research. The objectives of this first stage are: (1) to identify appropriate concepts and measures of certain behavior predispositions and specific, objective attributes of urban environments and (2) to develop operationally-verifiable test hypotheses concerning the relationships between urban environment attributes and subjective states of social isolation and social press mediated by these predispositions. The term "social isolation" refers to a psychological state in which individuals feel that they are separated from significant groups. The term "social press" refers to a psychological state in which individuals feel that they are unable to control social transactions. Both states represent polar extremes on a continuum.

(2) Background

After decades of study of variation in rates of psychopathology in different areas of cities, little has been learned about the effects of urban environments on mental illness (Griffin, 1975; Kasl and Harburg, 1975). Two general approaches have emerged from previous research. One approach assumes social characteristics may explain effects of urban environments on illness. In this approach, social characteristics have been conceived and measured in terms of demographic or situational variables. The other approach assumes that the relationships of urban environments to illness may be explained by physical characteristics. These approaches will now be discussed.

The theoretical bases for the assumption that social characteristics may explain the effects of urban environments on health were provided earlier, in the works of Freud, Bernard and Cannon (Engel, 1953). Further impetus for such research was provided by animal experiments. In these studies, disruptions of established social relations were found to be related to various forms of abnormal and bizarre behavior, resembling human social pathologies, and manifestations of physical pathologies (Cassel, 1970; Calhoun, 1963; Welch, 1965; Chapman, Des Jardins and Benson, 1969; Sugiyama, 1967; Perrins, 1965; Christian and Davis, 1964; Laws and Parks, 1968; McBride, 1971; Lapin and Cherkovich, 1971; McKissick, Flickenger and Ratcliffe, 1961; Ratcliffe and Cronin, 1958; King, Lee and Vischer, 1955; Stout and Snyder, 1969; Ratcliffe and Snyder, 1964, 1965; Ratcliffe, 1965).

This research raises the question of identifying social characteristics of urban environments related to illness. One method of identifying these characteristics has been demographic. As applied to the discovery of social factors related to illness, the characteristics of individuals are aggregated into convenient social categories and correlated with incidences and prevalences of illness. This approach has been criticized severely as failing to "represent the kind of social phenomena that may cause disease of anything else" (Suchman, 1967: 110), to identify the factors in the global situation which are causative (Smith, 1967), or to utilize appropriate descriptors (Kasl and Harburg, 1975).

A second method of identifying social characteristics stems from a reductionist perspective. It assumes that the process relating urban conditions to illness must be traced through successive layers of behavioral systems. As illustrated by studies of social factors related to coronary heart disease, the sequence of study tends to be: (1) geographic, racial and occupational differences in rates of illness; (2) the social factors accounting for the first findings; (3) social situations and forces; (4) personality and interpersonal characteristics interrelated with social situations; and (5) the metabolic and biochemical factors associated with personality and interpersonal characteristics. The realm of theoretical conceptualization of variables has been the vertical connection between different levels of organization of data. The objective has been to connect the broad demographic variables with the molecular level of causation in an ever-narrowing funnel of causation (Syme, 1967). The same general strategy has been employed in investigations of the relationship of social factors to other manifestations of illness.

It follows from this reductionist strategy that the social characteristics of urban environments are defined by social situations. This raises the question of how to identify the processes linking social situations to deleterious effects. Many investigators have conceived the social situation as exposing the individual to "stress". The term "stress" has, however, been used in a variety of ways in these conceptualizations (Cassell, 1967). Hinkle (1973) points out, however, that the concept of "stress" adds nothing to understanding of the relationship between social and health variables. It is generally agreed that the research problem is to define situational factors which are related to increased general susceptibility to illness (Cassell, 1970; Chapman, Hinkle and Wolff, 1960; Wyler, Masuda, and Holmes, 1971).

There are relatively few hypotheses advanced to explain the relationship between objectively defined situational factors and increased susceptibility to illness. Most epidemiological research has been carried out from a psychiatric or psychoanalytical perspective in which the situational factors have been defined in terms of subjective perceptions of individuals. To the extent that this research has been carried out with a theoretical perspective, its basic assumptions have been derived from Sigmund Freud (1932), especially in its emphasis on subjectively defined threats to the ego. Little of this research is useful in planning urban environments to prevent illness because situational factors are identified only in terms of subjective perceptions.

The primary exception to this generalization is the work of Hinkle and associates (Hinkle and Plummer, 1952; Hinkle, Plummer, et al., 1957; Hinkle, Ostfeld, et al., 1958; Hinkle, 1959; Hinkle and Wolff, 1957a, 1957b, 1958; Hinkle, Redmont, et al., 1960; Hinkle, 1961, 1964; Chapman, Hinkle and Wolff, 1960). While Hinkle and his associates have taken the position that increased susceptibility to illness is a function of subjective perception, they have also investigated behavioral adaptations of individuals to social situations (Hinkle, 1959, 1961).

The relatively few studies which examined objectively defined situational factors derive their basic assumptions from Emile Durkheim's theories of social disintegration and social causes of suicide. According to these theories, the process of development of modern societies tends to disintegrate the ties which traditionally bound the individual to society. Two consequences of this process are: (1) dislocation of the individual from the network of social relations, resulting in social isolation and inadequate support for the ego; (2) the development of social divisions which prevent spontaneous coordination of social groups, resulting in frustration. Both states may lead to suicide (Durkheim, 1951, 1964; Nisbet, 1965). The assumptions that social changes or social divisions have deleterious effects are incorporated in hypotheses which seek to explain relationships between objectively defined social situations and illness. In the first category of social change, one set of studies conceives *rural to urban change* to be the salient characteristics of situations which increase susceptibility to illness. Adaptation to urbanization has been found to be related to hypertension in South African Zulus (Gampel, Slome, et al., 1962), high lung cancer risks (Haenszel, et al., 1962) and to increased mortality from coronary heart disease (Tyroler and Cassel, 1964). The second set of studies explains the effect of change from a rural to urban environment more specifically by *cultural conflict and incongruity* (Cassel, Patrick and Jenkins, 1960; Cassel and Tyroler, 1961). This hypothesis assumes that incongruity arises between the folk-culture of traditional rural people and the modern social roles required by a highly organized urban and industrial society which may lead to illness. Higher rates of absenteeism among first-generation than second-generation rural factory workers support this hypothesis. Cultural conflict and incongruity may also explain the marginal status associated with solitary individuals in Seattle who developed tuberculosis in contrast to a control group also exposed to the bacillus (Holmes, 1956). According to Park (1928), social change may lead to marginal status as a consequence of the inability of individuals to break with past associations which prevents integration into new situations. Both cultural conflict and incongruity hypotheses, and the marginal status hypotheses, assume the same behavioral response to social change as described by Park.

The *social readjustment* hypothesis also assumes that social change increases susceptibility to illness (Holmes and Rahe, 1967). According to this hypothesis, the amount of life change, measured by the Social Readjustment Rating Scale (SRE), predicts the probability and severity of illness within a period of two years after life change events. This hypothesis appears to explain the scattered evidence that moving to new communities, such as New Towns in England (Martin, et al., 1957; Clout, 1962; Young and Willmott, 1957) or elderly housing projects in the United States (Lawton and Cohen, 1974), is related to increased illness.

While early appraisals of the ratings of life change events suggested little variability among subjects from different cultures (Komaroff, Masuda and Holmes, 1968), subsequent studies have suggested differences between rural and urban residents, Americans and Swedes, and Americans and Japanese (Dohrenwend and Dohrenwend, 1974). To this degree, it appears that SRE scores are a less universal measures of social change than originally suggested.

The life change events include events which may have a different significance to the individual than social change. These include events which represent deprivation of group supports. Durkheim's theory is that social change leads to isolation of individuals from social groups. It is thus possible that social isolation explains effects of social change. In fact, research upholds the view that deleterious effects of social change are reduced by group supports. Group supports have been found to reduce absenteeism among first-generation rural factory workers (Cassel and Tyroler, 1961), and reduce re-occurrence of tuberculosis (Holmes, Jaffe, et al., 1961). Other studies indicate that individuals exposed to life changes with group supports have fewer complications in pregnancy (Nuckolls, Cassel, and Kaplan, 1972), less need for correcting medication (De Aruajo, et al., 1973), less anxiety (Wrightsman, 1975), fewer psychiatric symptoms (Myers, et al., 1975), less anxiety (Wrightsman, 1975), fewer psychiatric symptoms (Myers, et al., 1975), better adaptation to chronic renal disease (Sviland, 1973) and better adaptation to emphysema (Dudley, et al., 1969). While these studies suggest that group support serves a buffering function (Cassel, 1974) it may nullify social isolation rather than buffer.

The second category of hypotheses concerning objective characteristics of social situations contributing to illness assumes that social divisions in society are deleterious. A major body of research which supports this view is composed of studies of *status inconsistency*. This hypothesis assumes that individuals do not average their or other's separate status ranks and arrive at an unequivocal rank or basic "mean status" continuum. As a consequence, discrepancies between status rank in different groups may arise (Lenski, 1954). High racial-ethnic status and low occupational status in an urban population is found to be related to elevated physiological responses, but the opposite status relationship is related to extremist political behavior (Jackson, 1962; Rush, 1967). Status inconsistency from upward social mobility in urbanization may possibly explain the relationship of high social status to heart disease (Cassel, 1971; Kaplan, et al., 1971). Other studies of status inconsistency have, however, yielded inconclusive findings (Meile and Haese 1969) and indicate that lower status rank may be more important than inconsistency (Goffman, 1957; Abramson, 1966).

Social role conflict and ambiguity is a second hypothesis in this category. It is advanced to explain the relationship of social divisions to increased susceptibility to illness. This research has suggested that social role conflict and ambiguity are related to symptoms of emotional distress (Kahn, et al., 1964). Similarly, those individuals studied by Hinkle and associates (Hinkle and Plummer, 1952; Hinkle, 1957, 1958, 1959, 1961; Hinkle and Wolff, 1958), who are unable to adapt to their social situations, are also exposed to multiple and inconsistent social demands.

A third hypothesis, advanced by Leighton (1959), is that social disintegration increases susceptibility to psychiatric disorders. As Leighton defines it, the extreme example of social disintegration would be a collection of human beings existing side by side in the same geographic area, yet unpatterned in their relations with one another. Subsequent studies appear to support his hypothesis, with divisive social relations prominent (Leighton, 1968).

The foregoing research has yielded significant findings suggesting relationships between social situational factors and susceptibility to mental illness. Yet the research is not very useful for planning urban environments to prevent illness and to promote health. This is because the urban environment is defined in terms of social situations. Conceptualizations of social situations are derived from paradigms which are intended to explain social action.[1] Social situations are thus abstractions which are intended to explain how the social relationship between the actors and others is subject to social control according to different theories of society (Wilson, 1970). This is not, however, the research question here; the question is how to change urban environments to prevent illness. To answer this question, it is necessary to study environments, not social situations.

The second approach to studying the relationships between urban environments and illness is not subject to the foregoing criticism. This approach defines the urban environment in terms of physical characteristics which can be designed and planned. This research has, however, yielded even less conclusive findings regarding relationships of urban environments to illness (Dohrenwend and Dohrenwend, 1974a and 1974b; Kasl, 1974; Srole, 1972). These weak relationships may, however, indicate that the particular variables chosen have been inappropriate and imprecise measures of environmental characteristics relevant to behavior -- for example, "housing," "neighborhood," or "community" (Chapin, 1951; Fried and Gleicher, 1961; Gans, 1962, 1967; Lansing and Marans, 1969, Wilner, et al., 1962).

The foregoing discussion of research approaches is summarized in Figure 1. This summary suggests the need for better concepts and measures of urban environments. Research by ecological psychologists

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[1] This statement applies particularly to cultural conflict and incongruity, status inconsistency, social role conflict and ambiguity, and social disintegration hypotheses. Studies of rural to urban change and social readjustment do not completely explain the relationship between objective events and increases susceptibility to illness.

Figure 1

Approaches to Studying Relations of Urban Environment to Illness

Characteristics of Urban Environments	Research Approaches		
Properties	Social		Physical
Levels of Organization	Populations Social Situations		Communities Neighborhoods Housing
System Attributes	Social Change	Social Divisions	Generally Unspecified
Exlanation of Effects	Urbanization Cultural Conflict & Incongruity Social Readjustment	Status Inconsistency Role Conflict & Incongruity Social Readjustment	Generally Unexplained

over two decades suggests that each level of behavior has its own environment. The ecological environment has been found to have temporal and physical attributes and occurs in bounded units which are not arbitrarily defined. The environment consist of "highly structured, improbable arrangements of objects and events which coerce behavior in accordance with their own dynamic patterning"...(Barker, 1968, 4, 4-11). It is clear from this research that environments are organized in terms of behavior settings with boundaries and with internal organization of behavior (standing patterns of behavior) and with natural and man-made objects (milieus). The identification of such behavior settings requires methodical study (Barker, 1968). Thus, it is likely that gross and aggregative environmental phenomena such as housing projects, neighborhoods, and communities, are not isomorphic to units of environment that affect behavior. Over a period of many years of research, however, ecological psychologists have established that variation in characteristics of behavior settings have significant effects on both the behavior and psychological states of inhabitants (Barker, 1968; Barker and Gump, 1964; Gump and Friesen, 1964; Wicker, 1967; Willems, 1964a, 1964b, 1965).

In the light of such findings, it is questionable whether or not previous research has examined the relationship between urban environmental attributes *relevant to behaviors*. It is also questionable, therefore, that the process linking the environment to increased susceptibility to illness has been examined. A possible solution to these problems of conceptualizing urban environments may be to use the concept of *behavior settings*, which includes both social and physical components, to define urban environments. This research proposes to use a similar concept to this one.

A further problem in understanding the relationship of urban environments to illness is conceptualization of behavioral responses to environmental stimuli. The findings of animal experiments suggest that the effects of environmental change vary with behavior. Male rats, with their female consorts, who are able to control territory by dominant behavior are healthier and more normal in behavior than other rats when exposed to crowding (Calhoun, 1963). Overcrowded dominant rats display less enlargement of medulla and adrenal cortices (Welch, 1965) and less alteration of adrenal cortical, testicular endocrine, central nervous system and biochemical functioning (Chapman, Des Jardine and Benson, 1969; Mason, 1968a). Similar effects were found with wild monkeys living in high density (Sugiyama, 1967).

Two contrasting perspectives are apparent in epidemiological research. One perspective has sought to explain behavioral response by social influences on behavior, drawing upon social science theory (Cassel, 1964, 1970). The assumption in this perspective is that responses of populations are analytically separable from those of individuals, involving different levels of abstraction (Cassel, 1967, 1974). The opposite perspective assumes that the responses of individuals to their environment that lead to increased susceptibility to illness are too variable and complex to explain. Such responses are assumed to be a function of unpredictable symbolic perceptions and evaluations of environment (Hinkle and Wolff, 1957a and 1957b, 1958, 1960; Chapman, Hinkle and Wolff, 1960; Hinkle, 1961, 1964).

Griffin (1974) has analyzed the bodies of research which support both perspectives. He found that behavioral responses were conceptualized in terms of either the normative or interpretive concepts of social interaction in sociological theory. Deviance-correcting, stable, conforming behavior by actors is assumed in the normative paradigm; performance-devising, adjusting and self-directed behavior is assumed in the other paradigm (Wilson, 1970). The normative concept of social interaction was employed to explain the relation of indicators of illness of social situations, such as cultural conflict and incongruity and marginal status and its opposite condition of group supports (Cassel and Tyroler, 1961; Holmes, 1956; Holmes, Jaffe, et al., 1961). The subjects in these studies are conceived to be unable to adjust their stable, traditional behavior to changed social expectations and to persist in psychological attachments to traditional family, kinship and community groups. Despite contrary interpretations of data, very similar behavioral responses to social situations were observed among Chinese professionals, isolated from their homes, who became relatively ill (Hinkle, Ostfeld, et al., 1958; Hinkle, 1959).

In contrast, studies of status inconsistency and social role conflict and ambiguity assume actors devise performances according to their perceptions of social situations and consequently adjust to social expectations. This is the interpretive concept of social interaction. Inability to adjust to social situations is explained by the characteristics of social status and role expectations rather than by stable, persistent behavior (Lenski, 1956; Jackson, 1962; Rush, 1967; Kahn, et al., 1964). Although the behavior of women telephone operators and working class men studied by Hinkle and associates has been interpreted as idiosyncratic, observations of their behavior and descriptions of their situations are consistent with both status inconsistency and social role conflict and ambiguity (cf. Hinkle and Plummer, 1952; Hinkle, Ostfeld, et al., 1958).

On the basis of this analysis, it appears that social situations may elicit two contrasting behavioral responses. The first behavioral response is deviance-correcting, resulting in stable behavior conforming to cultural norms. The second behavioral response is performance-devising, resulting in adjustment of behavior to perceptions of social situations. The differences in behavioral responses are not explained by sociological variables. While it is logically possible that these differences in behavior may be explained by differences in cultural norms or in social roles or status, or by idiosyncratic characteristics of individuals, the data from epidemiological research do not suggest this interpretation. The remaining hypotheses which have been advanced to explain behavioral responses to social situations are less specific in their behavioral assumptions. It appears, however, that the social readjustment hypothesis is logically consistent with the assumption that subjects adjust their behavior to new social expectations. Findings are

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not entirely consistent with this assumption. While amount of life change has proven to be a reliable predictor of illness for predominantly middle class subjects (Rahe and Holmes, n.d.a.; Wolff, 1972; Holmes and Holmes, 1970), it has been a weak predictor for lower social class subjects (Wyler, Masuda and Holmes, 1971) and for socially heterogeneous Navy subjects (Rubin, Gunderson, and Arthur, 1969; Rahe, Mahon and Arthur, 1970; Rubin, Gunderson and Doll, 1969). Differences in behavioral responses to life change events by social class would be expected from previous analysis of other research. While cultural differences cannot be dismissed as a possible explanation of these differences, the highly discrepant findings for lower social class with findings for educated middle class subjects seem inadequately explained by cultural differences in view of the significant degree of concordance of evaluation of such events found previously for such subjects (Komaroff, Masuda and Holmes, 1968).

Findings of research with regard to the social disintegration hypothesis are consistent with the foregoing research, and indicate that subjects may respond to social situations according to both concepts of behavior (Leighton, 1968).

The implications of analysis of the foregoing studies is that there are two predispositions which account for the two behavior responses that are assumed in the normative and interpretive paradigms. The first is a predisposition to deviance-correcting, stable, and conforming behavior; the second is a predisposition to performance-devising, adjustive, and self-directed behavior.[2] Previous research thus supports the hypothesis that populations are predisposed to respond to social situations with one of two contrasting behaviors that are neither determined by situational factors nor completely variable with each individual.

This research proposal is based on this hypothesis. The principal investigator developed its theoretical and conceptual bases, which has been discussed in the foregoing literature review. This research began in 1964-67 in a study of the effects of rapid urbanization in the Cape Kennedy impact area in Florida and continued under a special Research Fellowship from the U.S. Public Health Service to study the effects of rapid urbanization on health. Findings were presented in an extensive dissertation research on the subject of conceptualizing social causes of illness (Griffin, 1974). A portion of this research is published (Griffin, 1975). Additional theoretical research has been carried out by doctoral students in the Division of Man-Environment Relations of The Pennsylvania State University in connection with a graduate seminar on environment, behavior, and health offered by the principal investigator.

Subsequent research has led to further refinement of early work. Using old survey data gathered in 1967 in Florida, Griffin, Stover and DeJoy (1975a and 1975b) explored the relationship of neighborhood characteristics to psychological well-being. The research yielded findings which were generally consistent with the hypotheses advanced previously (Griffin, 1974), but its primary significance for the research proposed here is that it established the need for better concepts and measures of environment and of behavior than and measurements of behavior emerged from a research project in connection with evaluation of effects of deinstitutionalization of juvenile delinquents in Pennsylvania, carried out over the summer of 1975 by Stover and Griffin. The work identified a variety of well-validated psychological tests which appear to define and to measure two contrasting sets of behavioral patterns, traits, or value orientation. These seem to be related to one another and to predispositions hypothesized to exist in previous work (Griffin, 1974). This research, which was part of a large college-wide project, was subsequently terminated before completion and publication for reasons unrelated to this aspect of the project. The basis for better concepts and measurements of environment emerged from reviews of research in the growing field of environment and behavior studies. Some of the findings of this research were presented in a paper delivered to the National Planning Congress (Griffin, 1976). The rest of the findings will be presented in a forthcoming book on Environmental Quality and Human Well-Being written with social psychologist Patterson and commissioned by the Brooks/Cole Publishing Company, for publication next year. This proposal draws on this previous research.

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[2] This finding will be discussed in greater detail in connection with the "Rationale" for the proposed research.

(3) Rationale

The foregoing review of previous research with regard to the relationship of urban environments to illness indicates that further advancement of knowledge may result from (a) use of the concept of settings to define urban environments and (b) inclusion of the concept of predispositions to explain variation in behavioral responses to settings. An understanding of the causal process requires investigation of (c) the psychological effects of interaction of behavior with urban settings and (d) the effects of psychological states on physiological and other responses. These variables will now be discussed.

(a) Urban settings: The problem presented by previous research for environmental planning and design to prevent illness, and pathology generally, is that relevant and significant environmental variables are not identified. While social factors seem to be related to illness, these are usually defined in terms of abstract and inferred social situations, generalized milieus, or subjectively defined events that are too vaguely related to environment to be controlled by planning and design. Conversely, previous research which has defined urban environments by physical attributes, while related to environmental characteristics which can be controlled by planning and design, have yielded weak and inconclusive relationships to illness.

The well validated concept of behavior settings defines environment to include social situational influences which have long-term and enduring effects (i.e., standing pattern or behavior), but defines these attributes in terms of observable and measurable behaviors rather than

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conceptual abstractions and momentary and subjective psychological phenomena. Behavior settings also include man-made and natural objects (i.e., milieus) which are conceived to be interrelated with these behaviors so that the environment includes physical as well as social attributes. Characteristics to behavior settings are thus more likely to be relevant to behavior and to illness than the gross, ill defined environments which have been previously studied.

However, our use of the term "behavior settings" deviates from the strict, technical use of the term by Barker and his associates. To avoid further confusion, we will refer to our concept of urban environment as urban setting rather than behavior setting.

We accept the assumption that the ecological environment, or the environment of behavior, occurs in bounded units which are not arbitrarily defined and which have internal organization. The boundaries are, in our view, not likely to coincide with the boundaries that residential developers and planners use to define environments for quite different purposes. In particular, we expect the physical attributes of urban environment which are relevant to behavior to be less gross and less aggregative phenomena than such environmental variables as housing projects and neighborhoods, as conventionally defined in urban planning. However, we do not wish to imply that the environment relevant to behavior in which we are interested consists of very small-scale settings to which Barker has restricted his use of the term "behavior setting". We prefer instead to agree with Barker's statement that each level of behavior has its own environment, and examine urban settings related to broad patterns of behavioral activity at work, home, leisure, and community places.

In our concept of urban settings, we assume, as does Barker, that the environment relevant to behavior includes social attributes (standing patterns of behavior) and their relation to physical objects (milieus). However, we do not accept the methodological restrictions which are imposed by Barker's methodology upon the identification of social attributes. In our view, for example, neighboring in a working class residential area, or participatory management in a factory, represent social attributes. In common with Barker, we wish to identify such social attributes in terms of objective observations rather than interpretations of these observations from the perspective of social controls of behavior. This is not because we regard such interpretations of behavior to be invalid, but because we believe that the environment must be defined in terms of indicators which are independent of behavioral response.

(b) Predispositions: Analysis of previous epidemiological research suggests, however, that populations or social groups respond differently to the same environments. The working hypothesis is that these varying behaviors result from different predispositions.[3]

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[3] The term "Predispositions" is used to designate the behavior to which individuals with the traits are assumed to be predisposed. Authors vary in their terminology.

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A sample of psychological tests indicates that dichotomous traits have been identified which are comparable to those implied from analysis of epidemiological studies of social situations. The question of whether such traits are distributed in a truly dichotomous fashion, bimodal fashion, or are portions of a normal distribution is not critical to this research. The shape of the distribution will be a by-product of the research, and even if predispositions are portions of a normal distribution, the size of these portions in urban populations appears to be large enough to warrant serious study. These traits are listed in Figure 2 in columns according to the predispositions which are implied. The traits imply predispositions to behaviors that are not necessarily each perfectly isomorphic to the behavior response differences found in previous epidemiological studies. The behaviors, however, are dichotomous along similar dimensions, such as conformity versus self-direction, dependence-independence, external orientation versus internal orientation, etc., suggesting relationships to common, dichotomous predispositions identified by previous analysis of behavioral responses to situational factors in epidemiological research. It is assumed, therefore, that these different traits are situation-specific manifestations of the effect of two contrasting specific behavior predisposition.

These two predispositions are designated predispositions to "conformity" and to "self-direction". These terms were devised in previous research by Kohn and associates to describe two contrasting value orientations which were related among social classes (Kohn, 1959, 1971; Pearlin and Kohn, 1966; Kohn and Schooler, 1969). These predispositions, as identified by Kohn and associates, are related to behavioral response to occupational settings. But the terms "conformity" and "self-direction" appear to be the most descriptive of the behavioral response differences previously inferred to exist of all of these terms used in psychological tests. They are better descriptors than the terms previously derived from the use of sociological concepts of behaviors (i.e., deviance - correcting and performance - devising).

Analysis of the data supporting the idiosyncratic view of behavioral response supports the rationale for using this conceptionalization of predispositions in order to explain behavioral responses to urban behavior settings. It has been claimed that these data support the view that behavioral responses are idiosyncratic (Hinkle, 1961, 1964). The primary research on which these conclusions were based were investigations of individuals in occupational situations requiring either high degrees of conformity or self-direction. The situations were investigations of women telephone operators, working class men, and Chinese professionals isolated from home (Hinkle and Plummer, 1952; Hinkle, Plummer, et al., 1959; Hinkle, Redmont, et al., 1960).[4]

Kohn (1969) has found that conformity is related to lower social class rank. Because the relationship is probabilistic, not all individuals or lower social class rank should be expected to exhibit conformity.

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[4] The situation of Hungarian refugees is not clear from reports of research that are available.

Figure 2

Selected Behavioral Predispositions

Sources		
Wilson (1970); Griffin (1974)	Deviance-correcting	Performance-devising
Kohn (1959; 1971); Pearlin and Kohn (1966); Kohn and Schooler (1969)	Conformity	Self-direction
McLelland, et al., (1953) n Achievenment	Low n Achievement	High n Achievement
Rotter (1966) Locus of Control	External Control	Internal Control
Machiavellianism Christie, et al.	Low Machiavellianism	High Machiavellianism
Personal Competence (Campbell, 1960)	Low Personal Competence	High Personal Competence
Webster, et al., (1955) F-Scale Adorno, T., et al., (1950)	High Authoritarianism	Low Authoritarianism
Allport and Ross (1967 Intrinsic Religious and Extrinsic Religious Orientation	Extrinsic Religious Orientation	Intrinsic Religious Orientation
Digman and Digman (1974) M-Factor	Low M-Factor	High M-Factor

In the studies believed to support the idiosyncratic perspective, most subjects were inhabitants of settings requiring conformity. One setting was a large telephone company. The women telephone operators who became the most ill were described as alert, independent, and ambitious, which is consistent with self-direction. The least ill women telephone operators were described as gregarious participants in group life, indicating conformity (Hinkle and Plummer, 1952). The same characteristics differences in behavior were found among the most and least ill working class male subjects (Hinkle, Ostfeld, et al., 1958; Hinkle, Redmont, et al., 1960). In contrast, another study was made of Chinese professionals isolated from their homes in mainland China. Because of their professional status, it can be assumed their work settings required self-direction.[5] The most ill Chinese were described as abiding by principles and pursuing actions which they considered unrealistic, but regarded as socially desirable, and maintained loyalty to family and kinship groups on mainland China. The least ill were described as denying ties or obligations to families, kin and nation, and self-centered, manipulative role players (Hinkle, Ostfeld, et al., 1958; Hinkle, 1959). Thus, the data strongly suggest that, among subjects exposed to working class occupational settings, conformity was required, and those who exhibited self-direction tended to become ill because they could not exercise it; but among subjects exposed to professional situations, self-direction was required, and those who were oriented to conformity, but were deprived of groups (family and kin) to which they could conform and identify, were the most ill.

Hinkle (1961, 1964) concluded, however, that increased susceptibility to illness is a consequence of incapacity to adapt to ecological niches which is a result of subjective perceptions and factors too complex to integrate. This analysis, however, suggests different conclusions. In behavior settings requiring conformity, self-directed behavior may account for incapacity to adapt; but in behavior settings requiring self-direction, conforming behavior may account for inability to adapt.

Previous research with regard to effects of behavior settings on their inhabitants supports the assumption that behavior settings affect conformity and self-direction. In studies of small and large high schools in the Midwest, Barker and Gump (1964) found that students in small schools experienced more pressures to participate in school activities and perceived a greater sense of obligation to the school than students in large schools. The same differences seem to exist with regard to small and large communities, according to reports of still incomplete research-in-progress by Wright (Adelberg, 1976). The explanation of these differences which has been proposed is that the number of settings do not increase proportionately with increase in size of populations and the number of inhabitants of each setting declines. Thus, the small schools and communities are conceived to have undermanned

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[5] This is not clear from descriptions of the research, but is not contrary to any known facts.

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settings and the large schools and communities are conceived to have overmanned settings, resulting in differences in pressures to participate and to conform. Important consequences of these conditions are that academically marginal students in schools and old people, adolescents and children in communities report more obligations, fulfill more responsible positions and more often become functionaries and leaders in small rather than large settings (Willems, 1967; Adelberg, 1976). This has led to the generalization that overmanned settings tend to create non-performers, with consequent lack of involvement, obligation and challenge; and that undermanned settings tend to create non-performers, with consequent lack of involvement, obligation and challenge (Wicker, 1968). The implications of these findings are that undermanned settings create pressures for conformity and overmanned settings allow for self-direction; if, however, small children, adolescents, and old people in the Midwest tend to be predisposed to conformity,[6] it would not be expected that this effect would be found.

Overmanning and undermanning are, however, not the only attributes of behavior settings which are related to the dimension of conformity and self-direction. Kelly (1966, 1969) compared two high schools with high and low rates of turnover in population, characterizing their environments as fluid and constant respectively. He found greater pressures for conformity in the constant rather than fluid environment. Moreover, the structure of settings differed, with the constant environment restricting the range of opportunities for expression of behavior more than the fluid environment.

Michelson (1966) has proposed the concept of congruence-incongruence of social relations with spatial structures of behavior settings to explain relationship between social behavior and urban environments. Many of the traits measured by previously-identified psychological tests have been related to social variables. In particular, conformity and self-direction have been related to high and low social class rank (Kohn, 1969). Conformity and self-direction appear to predispose individuals to seek different social relations with others. If so, spatial attributes of behavior settings may be congruent or incongruent with conformity or self-direction.

(c) Psychological effects: If predispositions exist which are relevant to the process linking urban environments to illness, then it follows that behavioral responses to behavior settings may be conceived to be goal-directed: the goal of behavior is to achieve the state to which individuals are predisposed (e.g., conformity, self-direction). If these goals are not achieved, then feedback of these consequences of behavior would be expected. This assumption is consistent with how psychologists conceive feedback-loops to connect behavior with settings (Barker, 1968; Altman, 1975), but is also derived from basic theories of behavior (Miller, Galanter, and Pribram, 1960; Hinde, 1970). Feedback that goals have not been achieved would be expected to have some psychological effect. This is consistent with findings of research in environmental psychology (Altman, 1975; Barker, 1968). According to Cassel (1967), an adequate model of social processes increasing susceptibility to illness would conceive social situations to provide social stimuli that elicit adaptive responses. Types of adaptive responses may be assumed to be functions of variable previous experiences and/or genetic endowments of individuals. Thus, particular manifestations of illness can be conceived to be determined by individual characteristics selecting adaptive responses. If there are some psychological effects of feedback, then these effects may represent the stimuli to organisms which trigger a variety of adaptive responses and health consequences, including mental illness (Chapman, Hinkle and Wolffe, 1960; Hinkle, 1959, 1961).

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[6] Piaget (1959, 1965) suggests stages of development in which conformity predominates under the age of seven, but variation after this age. Lawton (1975) suggests that older people have greater dependence on their environment than younger people, which implies greater need to rely on conformity. Predisposition may vary with life stage.

Such psychological phenomena have actually been found to be related to illness, but have not been conceptualized as effects of feedback of previous experience with the environment. Instead, these psychological phenomena have been conceived to be independent rather than intervening variables, i.e., either "psychosocial processes" (lumping independent and intervening variables together) or experiential characteristics of individuals (treating intervening psychological variables as independent variables).

Two general psychological phenomena -- social isolation and social press -- have been shown to be related to illness. Both of these psychological phenomena can be conceived to be effects of feedback of the consequences of behavior. Social isolation conceived as loss of an important object or relationship has been found to be related to illness in a variety of so-called personality studies (Solomon, 1969; Bahnson, 1969; Taylor, 1974; Thomas, et al., Payke, 1975; Akiskal and McKinney, 1973). Manifestations of illness include cancer, autoimmune and infectious diseases, suicide, depression and mental illness. Social isolation conceived as lack of group supports has also been related to illness in a variety of studies of situational factors, previously reviewed (Holmes, 1956; Holmes, Jaffe, et al., 1961, Cassel and Tyroler, 1961; Nuckolls, Cassel, and Kaplan, 1972; De Aruajo, et al., 1973; Wrightsman, 1975; Svidland, 1973; Dudley, et al., 1969). It is thus possible to regard social isolation as a consequence of feedback of previous behavior rather than a personality characteristic.

Social isolation also appears to be related to predispositions to conformity. This is suggested by studies of personality characteristics of individuals who develop illnesses and have experienced social isolation. Such individuals have been described as self-sacrificing, conforming, self-conscious, shy, inhibited, and perfectionist (Soloman, 1969). It is possible that some of these traits may be related to selection of disease or to the experience of being ill; however, the general pattern, is broadly consistent with conformity as well as with low achievement and external control.

The second psychological phenomenon found in previous studies will be termed social press. Social press refers to social experiences in which individuals are unable to control social transactions. This term has rarely, if ever, been used to describe this phenomenon. It is derived from the term "environmental press" used in environment-behavior studies (Murray, 1938; Nahemow and Lawton, 1976). The same type of experience seems to be related to coronary heart disease. This illness is related to experiences of prolonged opposition between important internal goals and values, on the one hand, and demands of external environment, on the other hand (Dohrenwend, 1967). Rosenman, Friedman, et.al., (1966) found that the Type A behavior pattern is related to coronary heart disease. A major ingredient of this behavior pattern is a sense of time urgency (Jenkins, 1966), which indicates a lack of control over transactions with others (Glass, et al., 1974). Lack of control over recent events has been related to suicide (Paykel, et al., 1975) and situational pressures to gouty arthritis (Katz and Werner, 1975). Frustration has been related to epilepsy (Tayler, 1969), skin conditions (Musaph, 1969), asthma (Aitken, Zelley and Rosenthal, 1969) and essential hypertension (Brod, et al., 1959; Ulrych, 1969). Frustration implies lack of control over social transactions. In addition, studies of situational factors suggest that social press from lack of control of social transactions are involved. The effects of status inconsistency are explained, in part, by frustration (Jackson, 1962; Rush, 1967). Lack of control over demands and resources is conceived to explain the effect of social role conflict and ambiguity (Kahn, et al., 1964). Interferences with striving for social integration (e.g., preventing self-determination) is believed to explain the effects of community disintegration (Leighton, 1968).

In contrast to the experience of social isolation, social press seems to be related to predispositions to self-direction. The Type A behavior pattern factors which have been most strongly and consistently related to coronary heart disease are a sense of time urgency and high recent achievement (Jenkins, 1966). Glass, et al., (1974) presented a general theory of the relationship between time urgency in Type A personality and behavior. He suggests that the Type A individual is more concerned with and accustomed to maintenance of control over various aspects of his environment than others. Lack of control is regarded as a condition of helplessness which heightens tension and anxiety (Glass and Singer, 1972). For this reason, the Type A individual may be expected to accelerate his activities to avoid anxiety from perceived failure to cope successfully with environmental demands and activities. He also found that Type A characteristics are positively and significantly related to measures of predispositions, such as internal scores of locus of control and dominance, confidence, and social competence. It would appear reasonable to assume that Type A characteristics would also be related to self-direction.

High recent achievement is also consistently related to coronary heart disease. This illness is also related to aggressive, competitive, hostile and hurried behavior (Rosenman, Friedman, et al., 1966; Jenkins, 1966). The distinction between aggression and achievement behavior has been found in many instances to be subtle and quite subjective. High achievers have been found to be more assertive, competitive and hostile (Crandall, 1963; Shaw and Grubb, 1958). Aggressive behavior towards others, and consequent frustration, has been related to a spectrum of illness (Bastiaan, 1969). It would appear that the experience of social press may be a consequence of feedback of failure to attain such goals as self-direction, achievement, and internal control in interaction with behavior settings.

(d) Physiological effects: Social isolation and social press also appears to be possible links between behavioral responses to settings and physiological effects. Mason (1968a: 591) concluded from a review of psychoendocrine research that "situational criteria cannot be safely used as the sole basis for defining the psychological reactions to psychoendocrine experiments." This conclusion corresponds with the view taken here. Examinations of some of the major studies in this field suggest, however, that variation in the effect of situational factors may be explained by feedback of the consequences of previous behavior. Interpretations of certain findings suggest that the physiological effects of situational factors depend on whether or not behavior settings are threatening or protective.

In settings which appear to be threatening, individuals who are able to behave in a self-directed, internally-controlled manner avoid elevated physiological responses which are characteristic of those who conform to the standing patterns of behavior in the setting (Fox, et al., 1961; Mason, 1965; Rose, et al., 1969; Wolff, et al., 1964). In settings in which the threats are external to the settings, individuals who conform to the standing patterns of behavior of groups in the settings experience lower physiological responses than those who do not (Bogdonoff, et al., 1964; Bourne, Rose and Mason, 1967 and 1968; Miller, 1968; Rose, et al., 1969; Rubin, Rahe and Arthur, 1969). These findings suggest that, in threatening settings, self-direction reduces arousal because it avoids social press. In settings in which threats are external, conformity reduces arousal because it avoids social isolation. Thus, physiological changes may be precipitated by psychological effects of social press and social isolation. These may increase susceptibility to both physical and mental illness. Such relationships between these, and similar psychological phenomena, and various manifestations of illness have been suggested by others (Glass, et al., 1974; Akiskol and McKinney, 1973; Seligman, 1973; Booth, 1969; Taylor, 1974; De Araujo, et al., 1973; Cassel, 1974; Theorell, et al., 1972; Soloman, 1969; Bahnson, 1969).

In summary, the foregoing analysis provides the rationale for the variables in the conceptualization of the processes which link urban environments to illness shown in Figure 3. This conceptualization omits the influence of individual responses to psychological effects. It is assumed, after Cassel (1967, 1974), that individual factors pertain to selection of particular manifestations of illness rather than to increased susceptibility to illness.

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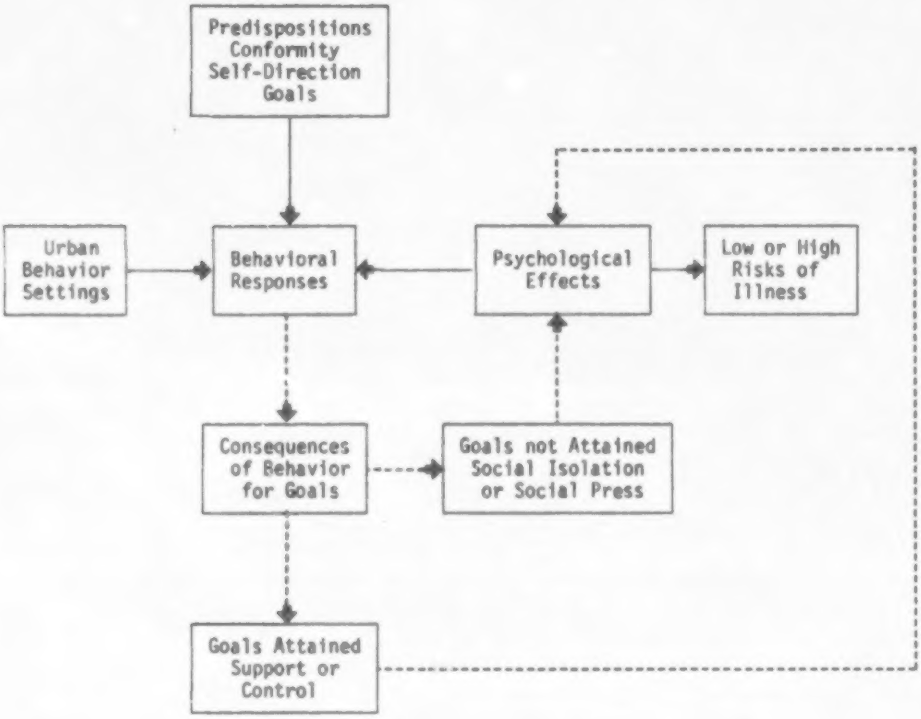
Figure 3

Conceptualization of Causal Process



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The conceptualization is based on certain assumptions. The first is that certain measurable characteristics of urban settings may tend to foster two deleterious psychological experiences: (1) social isolation and (2) social press. The second assumption is that the psychological experiences are consequences of feedback that the goals to which individuals are predisposed have not been attained. The third assumption is that these psychological effects may elicit physiological and other responses which increase general susceptibility to illness. This suggests that it is necessary to consider predispositions to behavior in order to determine how to plan and to design urban environments for social groups.

APPENDIX B

PREDISPOSITION ITEMS

LABORATORY SIMULATION QUESTIONNAIRE

Please read each of the following statements in this section and select the response that reflects your answer.

For all questions in this section you may respond:

Strongly Agree	Agree	Disagree	Strongly Disagree
A	B	C	D

18. It is not difficult to stay within the rules without thinking about it.

19. It generally works out best to keep on doing things the way they have been done before.

20. I never knew anyone who could keep up with me.

21. When I find my work has been interrupted, I usually just let it go.

22. When I do a good job for someone I expect them to show me some appreciation.

23. If something is going wrong, it is natural to correct your own behavior before anyone notices.

24. I generally see my work as something I have to do.

25. It is good policy to conceal your real reasons for doing something.

26. When I am exploring a strange place, I prefer to follow someone else.

27. My failures are mostly attributable to not finishing something I have started.

28. You don't have to think about keeping the rules -- it just happens.

29. There have been people in my life whose good example I try to follow.

30. In my personal conduct, I try to be flexible.

31. I would rather work in a group where someone directs the actions of each of us.

32. I react to the same situation in different ways depending upon my objectives.

Strongly Agree	Agree	Disagree	Strongly Disagree
A	B	C	D

33. There are right ways to behave and you don't have to keep thinking about them -- just follow them.

34. People who question the old accepted ways of doing things usually just end up causing trouble.

35. If at first you don't succeed -- try, and try again.

36. I almost always would rather work for a boss who tells me exactly what I am supposed to do.

37. In general, the reason that I obey the law is because a person doesn't have much choice.

38. It is usually a good idea to get your behavior back within the rules if you have gone beyond the rules.

39. If I have no control at all over others, it would really bother me.

40. In the verbal give and take with a group of friends, I almost never come out on top.

41. The traditional ways of doing things were once useful, but are not appropriate now.

42. It's wrong to do things differently from the way our forefathers did.

43. In my day to day life I accept limits on my behavior without thinking about it.

44. If I am interested in something, I usually make a good impression.

45. Whenever someone I know but don't like approaches me I usually step towards them.

46. You just have to do the best you can with what is available.

47. If a person starts to go beyond the rules of behavior, his own feelings are enough to make him return.

48. I enjoy keeping busy.

49. When conflict arises you just have to "get in there" and face the situation.

50. It is important to me to work in a place where there is cooperation among the employees.

Strongly Agree	Agree	Disagree	Strongly Disagree
A	B	C	D

51. You sometimes have to fool people to get them to do things your way.

52. The way I react to things, differs from one situation to another.

53. I speak in an authoritative manner.

54. Once an effort has begun the most important thing is staying with it until it has been completed.

55. If you want things to go your way, you have got to be able to persuade other people to go along.

56. My level of activity usually wears other people out.

57. Sometimes it is better to let things slide than to exhaust yourself in trying to do something right.

58. It is impossible for me to believe that chance or luck plays an important role in my life.

59. Even if other people are difficult, I can get them to change their behavior.

60. I would rather work for a boss who seeks my advice on most matters that affect me.

61. When I find that I have run out of work, I usually go look for something else to do.

62. I try to stay out of fights between my very good friends.

63. In a group of people, my opinions usually carry a lot of weight.

64. There is just too much for me to do to ever get caught up.

65. I tend to be easily influenced by people who speak with conviction.

66. If you just try harder, you can usually get any job done.

67. I can usually get other people to go along with me.

68. I sometimes feel like I should stay in bed.

69. I will usually do something that I don't like to do if it will retain the good will of those I respect.

Strongly Agree	Agree	Disagree	Strongly Disagree
A	B	C	D

70. In a verbal give and take with people, I usually don't have much to say.

71. It is important to have people believe you.

72. Being able to read the feelings of others is very useful in social situations.

73. People would be better off if they were concerned less with how to do things and more with what to do.

74. Sometimes I just like to sit down and do nothing.

75. I try to be friendly with acquaintances and neighbors.

76. It is essential to be able to influence others.

77. I find that arguments upset me.

78. There are general rules which tell me how to behave.

79. Only a few things are worth finishing if they require a lot from a person.

80. I tend to defer to others.

81. I would rather work for a boss who allows everyone to participate in making rules than for a boss who makes all the decisions.

82. If I find I can't do something, I simply ignore it.

83. People think of me as a direct and foreceful person.

84. When I make plans, I usually can make them work.

85. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

86. I have always felt that the best way to contribute to an effort is to do things exactly by the book.

87. There really is no such thing as "luck".

88. I am bigger and stronger than most people of my sex.

89. All in all, it is better to be humble and honest than to be important and dishonest.

Strongly Agree	Agree	Disagree	Strongly Disagree
A	B	C	D

90. My physical appearance causes others to treat me with deference.

91. In cases of conflict the best thing to do is give in.

92. I usally feel charged up and ready to do.

93. It is best to give others the impression that you can change your mind easily.

94. In the verbal give and take of a group of people, I usually hold my own.

95. I can't understand how some people get so much done.

96. The most important thing to teach children is absolute obedience to their parents.

97. It's all right to do anything you want as long as you stay out of trouble.

98. I think that most people can be trusted.

99. Bad breaks have sometimes prevented me from becoming an effective leader.

100. Many times I feel that I have little influence over the things that happen to me.

101. Sometimes I feel that I don't have enough control over the direction my life is taking.

102. No matter how hard I try, some people do not react to me as I want them to.

103. Are you generally one of the first people to try something new or do you wait until you see how it's worked out for other people?

One of First	Usually Early	Usually later	One of Last
A	B	C	D

104. I take a positive attitude toward myself.

Very Often	Often	Seldom	Almost Never
A	B	C	D

105. I wish I could have more respect for myself.

Very Often	Often	Seldom	Almost Never
A	B	C	D

106. When things go wrong for you, how often would you say it is your own fault?

Very Often	Often	Seldom	Almost Never
A	B	C	D

107. How often do you feel that you are about to go to pieces?

Very Often	Often	Seldom	Almost Never
A	B	C	D

108. How often do your ideas and opinions differ from those of your friends?

Very Often	Often	Seldom	Almost Never
A	B	C	D

RISK: RULES OF PLAY

OBJECT:

The object of the game is to occupy every territory on the board by elimination of all other players via simulated military attacks. There is a time limit of one hour. You will decide who has won the game.

EQUIPMENT:

A. Six sets of playing pieces consisting of cubes, each set of a different color. Each cube represents one army. Additionally, there are oblong pieces which represent ten armies each of which may be used to replace the individual armies when convenient.

B. The playing board showing a map of six continents, each of which is subdivided into a number of territories.

C. A deck of cards.

D. Six dice: 3 colored white and 3 colored red.

THE SET UP:

A. Each player selects a box of playing pieces and oblong pieces of the same color.

B. A Dealer is selected to distribute the cards. On each card is printed the name of a territory along with a picture of a foot soldier, a horseman, or a cannon. There are also two "jokers" which contain a picture of all three figures. The dealer removes the two jokers, shuffles and deals the remaining cards, one at a time to each player until all cards are dealt.

C. After the dealing is complete, each player places 2 armies on every territory which corresponds to those on the cards the player holds. Players then return all cards to the dealer, who returns the jokers, shuffles the deck, and places it alongside the board. NOTE: The board contains six continents which are composed of several territories. All territories of a continent are of the same "basic" color. For reference, the exact composition is as follows:

1. North America (basic color is yellow-brown)
   Alaska, Northwest Territory, Greenland, Alberta, Ontario, Quebec, Western United States, Eastern United States, Central America.
2. South America (basic color is turquoise)
   Venezuela, Peru, Brazil, Argentina.
3. Europe (basic color is blue)
   Iceland, Great Britain, Scandinavia, Northern Europe, Western Europe, Southern Europe, Ukraine.
4. Africa (basic color is pink)
   North Africa, Egypt, East Africa, Congo, South Africa, Madagascar.
5. Asia (basic color is green)
   Ural, Siberia, Yakutsk, Kamchatka, Irkutsk, Afghanistan, China, Mongolia, Japan, Middle East, India, Siam.

6. Australia (basic color is purple)
   Indonesia, New Guinea, Western Australia, Eastern Australia.

THE PLAY:

A. Accumulation of Armies:

On each turn throughout the game a player is entitled to additional armies via the following methods:

1. At the start of a turn, the player is entitled to 1 army for each 3 territories currently occupied. (eg., 12 territories yields 4 additional armies). Regardless of number of territories, a player is always entitled to a minimum of 3 armies.
2. If the player occupies an entire continent, the player receives extra armies, in addition to those above, according to the following schedule:

North America:	5
South America:	2
Europe:	5
Africa:	3
Asia:	7
Australia:	2

3. At the end of a turn, a player is entitled to one card if the player has successfully captured a territory. These cards are accumulated over a number of turns and traded for additional armies when any of the following combinations are obtained: three horsemen, three cannons, three foot soldiers, one of each kind, or any two cards and a joker. The cards are traded at the beginning of a turn, and must be traded on the next turn following the completion of the set. NOTE: The first set traded is worth 5 armies; each subsequent set increases this basic entitlement by 5 additional armies. Further, if a player occupies territories which correspond to those on the cards, the player is entitled to 2 additional armies for each such territory.

B. Placing Armies:

. Newly acquired armies are to be placed immediately upon currently occupied territories according to the preference of the player. (Exception: Armies obtained by drawing cards must be placed on the territories indicated on the cards.)

C. Method of Attack:

Attacks are made by rolls of the dice. Attacker is entitled to roll up to 3 dice; the defender rolls up to 2 dice, but the defender wins all ties. Only adjacent territories or territories connected by parallel lines may be attacked from territories already occupied by the attacker.

The attacker states from which territory he is attacking and against which territory the attack is being made. The attacker rolls either one, two, or three dice, each representing an army. The attacker must have one more army in occupation ...of the territory from which the attack is made... than the number of dice thrown. If the attack is successful, the winning armies are moved into the adjacent newly acquired territory. One must be left behind as no territory may be left undefended.

At the same time that the attacker rolls, the defender also rolls. If the defender has only one army, only one die may be rolled. Otherwise, the defender has the choice of risking either one or two armies by rolling one or two dice.

The dice are compared as follows:
The highest die of the attacker is compared with the highest die of the defender. If the attacker's die is higher, one defending army is removed from the board. If the defender has rolled two dice to two or more for the attacker, a second comparison is made. The second highest die of the attacker is compared with the second higher die of the defender. Again, if the attacker's die is higher, the defender loses. An attacker's armies are removed likewise if the attacker's dice are lower or if there is a tie. The defender always wins ties.

No more than 5 dice may be rolled on a single attack - three attacking and two defending. The defender can never lose more armies than the number of dice he rolls.

D. Capturing Territories:

When an attacker has caused the last army of an opponent to be removed from a territory the attacker must occupy the territory. Immediately, as many armies must be moved as the number of dice the attacker threw on the last attack. The attacker may move additional armies into the new territory so long as at least one army is left behind.

E. Option of Attack:

A player may continue to attack any adjacent territory so long as he has at least two armies on the territory from which the attack is made. The attacker may continue to attack even when the attacker loses on any one roll or rolls of the dice. The attacker may attack different adjacent territories to his own on subsequent rolls of the dice or he may attack the same adjacent territory a number of times. The player's turn is ended at the player's option or as a result of running out of armies with which to attack. The player may end his turn at any time or may continue until attack is no longer possible.

Brief Summary of Play

1. Player opens turn by determining entitlement to additional armies by:
    a. Count of territories occupied (1 army for every 3 territories)
    b. Count of continents occupied
    c. Checking accumulated cards.
2. Additional armies are placed on currently occupied territories.
3. Player makes any attacks he wishes. He may attack as many times as he wishes on a turn, provided he has at least two armies on one of his own territories which is adjacent to an opponent's territory.
4. Player ends his turn when he wishes, or when forced to as result of running out of armies.

5. At end of turn, player takes one card only if he has captured any territories on his turn.

Winning the game means occupation of every territory on the board by elimination of opponents.

NOTE: Questions about the rules may be asked of the moderator before the game begins, but not during the game itself.

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APPENDIX C

ENVIRONMENTAL PREFERENCES QUESTIONNAIRE

1. Questionnaire No.: ______________________ (leave blank)

2. What is your sex? ☐ Male ☐ Female

For the following questions, please place the number for the correct answer in the box to the right of the question.

3. Using the list below, how much education have you completed? ☐

    1. less than high school
    2. high school
    3. some college
    4. college
    5. graduate degree

4. Using the categories below, in what age group are you? ☐

    1. under 24
    2. 25-34
    3. 35-44
    4. 45-54
    5. 55-64
    6. 65-74
    7. 75 and over

5. Using the categories below, in what racial category are you? ☐

    1. White
    2. Black
    3. Hispanic
    4. Mexican American
    5. Other

6. Which of the following phrases best describes your feeling of belonging to the ethnic or nationality group from which your ancestors came? ☐

    1. no feeling at all
    2. not very strong
    3. strong
    4. very strong

7. How many people live in your household? ☐

1. only me (1)
2. me and one other person (2)
3. me and two other people (3)
4. me and three other people (4)
5. me and four other people (5)
6. me and five other people (6)
7. me and six other people (7)
8. more than seven people (8)

8. Using the list below, indicate how many people in your household are under 18 years of age? ☐

1. none
2. one person
3. two people
4. three people
5. more than three people

9. Using the list below, indicate how many people in your household have disabilities which require special care? ☐

1. none
2. one person
3. more than one person

10. Which of the following describes best your responsibilities in running your household? ☐

1. I make most decisions.
2. I share decisions with another.
3. Someone else makes most of the decisions.

11. Using the list below, indicate how long have you lived at this same place? ☐

1. less than 6 months
2. 6 months to 1 year
3. more than 1 year

12. How many different homes have you lived in the last 20 years?

☐	☐	☐
1 - 2 places	2 - 4 places	5 or more places

Instructions

Below are pairs of statements about living and working conditions. Please check the box below the statement with which you agree the most. Check only one box.

13.	I often like to see new places and meet new people. ☐ (Check if you agree more with this statement than the next one to the right.)	I often like to spend my time in familiar places with old friends. ☐ (Check if you agree more with this statement than the previous one to the left.)

(The rest of the questions should be answered the same way.)

14.	I am usually one of the first to try to do new things. ☐	I like to stick to doing familiar things. ☐
15.	I like to be independent. ☐	I like to depend on other people. ☐
16.	I sometimes think that it would be better for me if I spent more time outside the home. ☐	I sometimes think that it would be better for me if I spent more time at home. ☐
17.	I prefer to have meals at regularly scheduled times to plan my day. ☐	I prefer for meals to fit the convenience of everyone so we can get together. ☐
18.	I should pay attention more often to what other members of the household expect of me. ☐	I should decide what we should do at home more frequently than I do. ☐

19.	You have to have some kind of routine for work around the house to know when you are finished with your work. ☐	You have to have some kind of routine for work around the house to be sure that you do everything. ☐
20.	The more initiative that I take for doing things around my home, the more I enjoy my home. ☐	The less initiative that I have to assume at home, the more that I enjoy my home. ☐
21.	I like everyone at home to be busy with their own activities, even if they come and go a lot. ☐	I like to be able to count on people being together at home at certain times so that they are available. ☐
22.	Sometimes the pace of life at home has to be faster than I like so that everyone can do the things they like. ☐	Sometimes the pace of life at home has to be slower than I like so that it can be relaxing for others. ☐
23.	I like to live in a place with just enough space for our [illegible]ities, but not a lot of spa[illegible] maintain. ☐	I like to live in a place with enough space for frequent visitors. ☐
24.	It would be helpful to live near a shopping center where I can get everything I need. ☐	It would be helpful to live near a small store where I know the people and I can get most of the daily things I need. ☐
25.	I enjoy doing household chores by myself more than with other people. ☐	I enjoy doing household chores with other people more than by myself. ☐

26.	In my home life, I enjoy seeing one or two people who are interested in doing the same things that I am. ☐	In my home life, I enjoy being around people who feel the same way about things as I do. ☐
27.	It is more important in marriage for husband and wife to have the same kind of family background than to be interested in doing the same things. ☐	It is more important in marriage for husband and wife to be interested in doing the same things than to have similar family backgrounds. ☐
28.	I enjoy seeing everyone in a household together at the same time. ☐	I enjoy a household where something is always going on. ☐
29.	Personal decoration and arrangements are important to making me feel at home. ☐	Owning the place I live in is important to making me feel at home. ☐
30.	It is important to me for people at home to do what I ask them to do. ☐	It is important to me for people at home to care personally for me. ☐
31.	I enjoy entertaining people in my home that I know well and like. ☐	I enjoy entertaining people in my home that like and respect me. ☐
32.	When I do something for others at home, I want personal recognition and attention. ☐	When I do something for others at home, I want to do it and don't expect any recognition. ☐

33.	When we do things together at home, other people usually decide what to do. ☐	When we do things together at home, I frequently decide what to do. ☐
34.	In a good home everyone conforms to general rules. ☐	In a good home everyone makes their own rules. ☐
35.	In a good household, everyone knows what they are expected to do. ☐	In a good household, everyone does what they feel that they can do best. ☐
36.	Good neighbors are always glad to see you and are interested in how you are doing. ☐	Good neighbors are pleasant and polite, and mind their own business. ☐
37.	Good neighbors come around and offer their help when they think you need it. ☐	Good neighbors are the kind of people that you can get help from when you need it. ☐
38.	I like to live in a neighborhood where everybody is relaxed and informal with one another. ☐	I like to live in a neighborhood in which I know exactly what to expect from the neighbors. ☐
39.	If there were crime problems in the neighborhood, I would like for someone with a lot of influence to take charge. ☐	If there were crime problems in the neighborhood, I would like everyone to be involved in deciding what to do about it. ☐
40.	I like a household where everyone decides themselves what they will do each day. ☐	I like to live in a household where each person's activities are coordinated with others. ☐

41.	I think people should avoid doing things to their property that their next-door neighbors dislike. ☐	I think people should be able to do anything they want to their own property even if their next-door neighbors dislike it. ☐
42.	A good elected official ought to come around to your home once in a while and see how you are doing. ☐	A good elected official ought to be available when you need him and leave you alone. ☐

If you do not have a job at the present time, please skip to the last page (page 13). If you have a job, please continue with question number 43 on the next page (page 8).

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43. Briefly, what kind of work do you do? ____________________

____

____

____.

44. Do you like the kind of work which you do, even if you don't like the place that you work?

☐ Yes ☐ Undecided ☐ No

45. If you were paid enough money, would you like to continue to do the same kind of work that you do now?

☐ Yes ☐ Undecided ☐ No

46. How long have you been doing the same kind of work as you do now? ☐

1. less than 6 months
2. 6 months to a year
3. more than 1 year

47. How many different places have you worked?

☐ 1-2 places ☐ 2-4 places ☐ 5 or more places

48. At work, would you describe yourself as:

☐ Top Manager? ☐ Middle Manager? ☐ Worker?

Instructions

Next are pairs of statements about working conditions. Please check the box below the statement with which you agree the most. Check only one box.

49.	Sometimes I would keep working indefinitely if I didn't have to go home. ☐	Sometimes when I get up Monday morning, I hate the idea of going to work. ☐
50.	It is easier for me to plan work if I come to work and leave at about the same time. ☐	It is easier for me to go to work if I have the same hours of work each day. ☐
51.	I need some kind of routine to be sure that I do what others expect of me. ☐	I need some kind of routine to keep from jumping from one thing to another. ☐
52.	It would make my work easier if I were given more responsibility. ☐	It would make my work easier to have some limits on my responsibilities. ☐
53.	It might help me to get things done if I had to take the initiative. ☐	It might help me to get things done if I knew someone else would take the initiative. ☐
54.	I would rather have too many people around to do a job than too few. ☐	I would rather have too few people to do a job than to have so many that I am not needed. ☐
55.	Sometimes work has to be done faster than I like to get good results. ☐	Sometimes work has to be done more slowly than I like to get good results. ☐

56.	I find that I work best when I have space for my own activities. ☐	I find that I work best when in a place where people are always coming and going. ☐
57.	Sometimes you can have too many machines around to get the job done efficiently. ☐	Sometimes you can have more problems with running machines than it is worth. ☐
58.	I can best contribute to an effort when the work is divided up among us. ☐	I can best contribute to an effort when we all work together under someone's direction. ☐
59.	I find that I like to work closely with one or two people who want to accomplish the same things. ☐	I find that I like to work with a group of people who feel the same way about things as I do. ☐
60.	Sometimes I wish that I could work with a small group of people in one place. ☐	Sometimes I wish that I could have more contact with new people at work. ☐
61.	It would make my work more pleasant to have a place in which people don't walk in without an invitation. ☐	It would make my work more pleasant if visitors dropped in to see me once in a while. ☐
62.	It would be helpful if I had a space which everyone considered to be my own place to work. ☐	It would be helpful if I could decorate the place where I work with my things. ☐
63.	I enjoy working at a place where people do what you want them to do. ☐	I enjoy working at a place where people are good personal friends. ☐

64.	I find it easier to work at a place where I know exactly who to go to and what to do when I have problem. ☐	I find it easier to work at a place where I am able to go to a number of people when I have a problem. ☐
65.	It helps me to do my work well if I know exactly what my duties and responsibilities are. ☐	It helps to do my work well if I am given more responsibility when I do a good job. ☐
66.	I like a lot of personal recognition and attention at work. ☐	I like a lot of support from others at work. ☐
67.	I like to decide myself how to do my work. ☐	I like to be given considerable direction by my boss at work. ☐
68.	I like to know exactly what the rules are at work. ☐	I like to work at a place where people participate in making rules. ☐
69.	I like to work at a place where individual needs are considered in enforcing rules. ☐	I like to work at a place where rules are consistently enforced. ☐
70.	I like to know exactly what the duties and responsibilities of my job are. ☐	I like a job where my responsibilities increase with how well I do my duties. ☐
71.	I like to be respected for my abilities at work. ☐	I like to have people care for my personal welfare at work. ☐

72.	I like to work for someone who takes the time to talk to me now and then to see how I am doing. ☐	I like to work for someone whom I can contact about work problems even if we always stick to business. ☐
73.	It is easier for me to work in a place where I know who makes the decisions at the top. ☐	It is easier for me to work in a place where I have personal contact with people who make some of the decisions. ☐
74.	I prefer a job in which I can get people to help me do my work. ☐	I prefer a job in which I can help other people do their work. ☐
75.	I like to work in a place where I feel someone is in charge, even if I don't like everything about the place. ☐	I like to work in a place where I can change things, even if it is not always clear who is in charge. ☐

Instructions

These questions are intended to give us a general idea of the kind of person you are. Check the box under the answer with which you most agree.

	Generally speaking, I am:	
	OFTEN THIS WAY	SELDOM THIS WAY
76. I take a positive attitude toward myself.		
77. I wish I could have more respect for myself.		
78. When I make plans, I can usually make them work.		
79. I speak in an authoritative manner.		
80. Even if people are difficult, I can get them to change their minds.		
81. In a group of people, my opinions usually carry a lot of weight.		
82. If I find that I can't do something, I simply ignore it.		
83. I can usually get people to go along with me.		
84. People think of me as a direct and forceful person.		
85. It's all right to do anything you want as long as you stay out of trouble.		

Table C-1

Contrasting Preference Measures: Distributions Consistent with Salience to Both Social Support (SS) and Personal Control (CS)

ITEM NUMBER	Preferences by Salient to Predisposition		% Distribution of Responses			Pearson's r Significance
			SS	CS	Diff	
16	I sometimes think that it would be better for me if I spent more time outside the home.	I sometimes think that it would be better for me if I spent more time at home.	70	54	24	r = .18 s = .05
25	I enjoy doing household chores myself more than with other people.	I enjoy doing household chores with other people more than by myself.	71	56	27	r = .27 s = .03
26	In my home life I enjoy being around people who feel the same way about things as I do.	In my home life I enjoy seeing one or two people who are interested in doing the same things that I am.	58	62	30	r = .14 s = .04
29	Personal decorations and arrangements are important to making me feel at home.	Owning the place I live in is important to making me feel at home.	70	56	26	r = .26 s = .04
33	When we do things together at home other people usually decide what to do.	When we do things together at home I frequently decide what to do.	53	67	20	r = .19 s = .10
41	I think people should be able to do anything they want to their own property even if their next-door neighbors dislike it.	I think people should avoid doing things to their property that their next-door neighbors dislike.	80	73	53	r = .52 s = .001
50	It is easier for me to go to work if I have the same hours of work each day.	It is easier for me to plan work if I come to work and leave at about the same time.	73	67	40	r = .39 s = .01
56	I find that I work best when in a place where people are always coming and going.	I find that I work best when I have space for my own activities.	56	61	18	r = .17 s = .16
[illegible]	I can best contribute to an effort when we all work together under someone's direction.	I can best contribute to an effort when the work is divided up among us.	69	53	22	r = .36 s = .05
68	I like to know exactly what the rules are at work.	I like to work at a place where people participate in making rules.	69	56	25	r = .28 s = .08
70	I like to know exactly what the duties and responsibilities of my job are.	I like a job where my responsibilities increase with how well I do my duties.	69	61	30	r = .16 s = .04

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Table C-2

Contrasting Preference Cluster Scales

Item Number	Cluster: Preference Measures	
	Scored Positively	Scored Negatively
	Cluster 1: Self-Expression	
16.	I sometimes think that it would be better for me if I spent more time outside the home.	I sometimes think that it would be better for me if I spent more time at home.
35.	In a good household, everyone knows what they are expected to do.	In a good household, everyone does what they feel that they can do best.
62.	It would be helpful if I could decorate the place where I work with my things.	It would be helpful if I had a space which everyone considered to be my own place to work.
	Cluster 2: Homeplace Privacy	
25.	I enjoy doing household chores by myself more than with other people.	I enjoy doing household chores with other people more than by myself.
55.	Sometimes work has to be done faster than I like to get good results.	Sometimes work has to be done more slowly than I like to get good results.
59.	I find that I like to work with a group of people who feel the same way about things as I do.	I find that I like to work closely with one or two people who want to accomplish the same things.
75.	I like to work in a place where I feel someone is in charge, even if I don't like everything about the place.	I like to work in a place where I can change things, even if it is not always clear who is in charge.

Item Number	Cluster: Preference Measures Scored Positively	Scored Negatively
	Cluster 3: Functional Integration	
26.	In my home life, I enjoy seeing one or two people who are interested in doing the same things that I am.	In my home life, I enjoy being around people who feel the same way about things as I do.
33.	When we do things together at home, I frequently decide what to do.	When we do things together at home, other people usually decide what to do.
56.	I find that I work best when I have space for my own activities.	I find that I work best when in a place where people are always coming and going.
70.	I like a job where my responsibilities increase with how well I do my duties.	I like to know exactly what the duties and responsibilities of my job are.
	Cluster 4: Neighborhood Privacy	
41.	I think people should avoid doing things to their property that their next-door neighbors dislike.	I think people should be able to do anything they want to their own property even if their next-door neighbors dislike it.
36.	Good neighbors are always glad to see you and are interested in how you are doing.	Good neighbors are pleasant and polite, and mind their own business.
50.	It is easier for me to plan work if I come to work and leave at about the same time.	It is easier for me to go to work if I have the same hours of work each day.
	Cluster 5: Territorial Deprivation	
61.	It would make my work more pleasant to have a place in which people don't walk in without an invitation.	It would make my work more pleasant if visitors dropped in to see me once in a while.
64.	I find it easier to work at a place where I know exactly who to go to and what to do when I have a problem.	I find it easier to work at a place where I am able to go to a number of people when I have a problem.

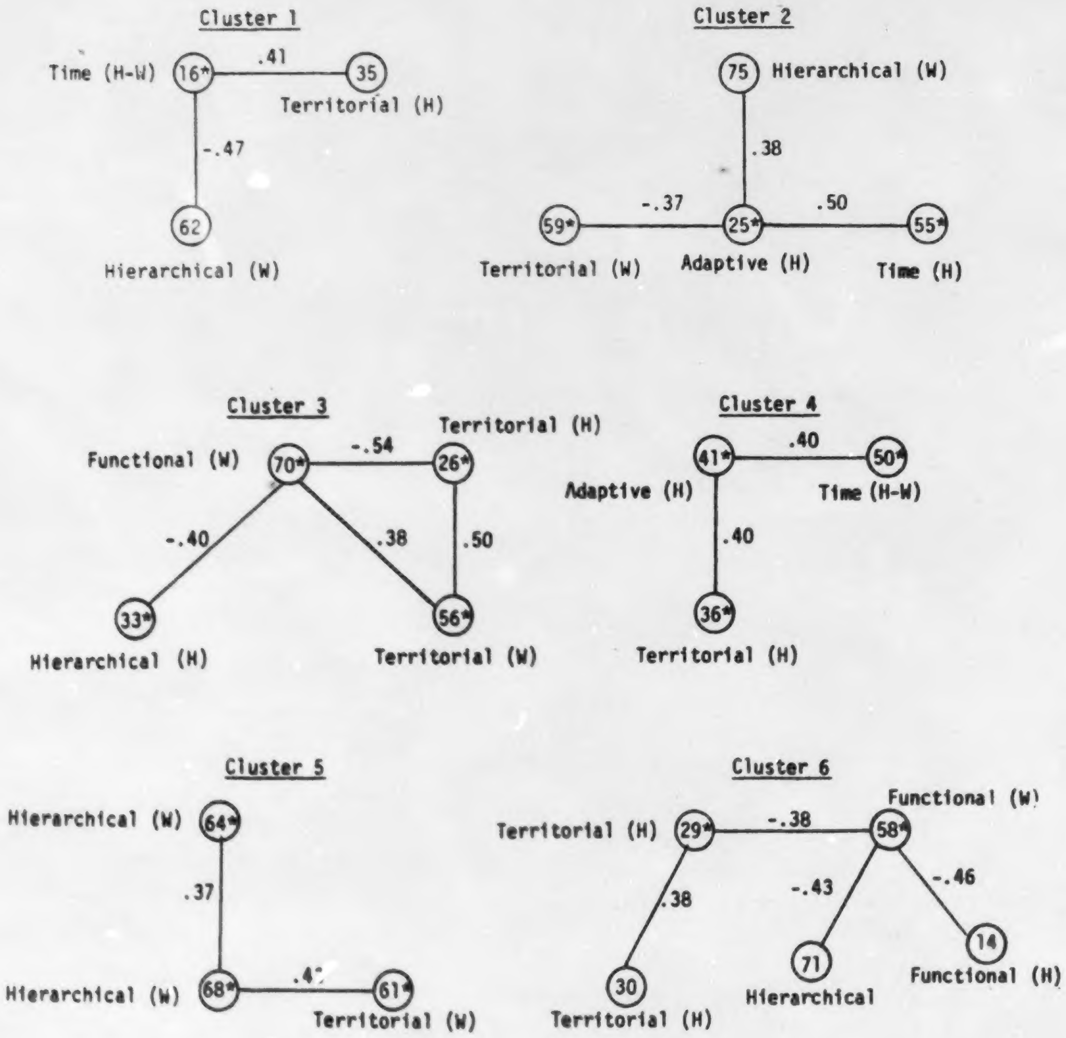
Item Number	Scored Positively	Scored Negatively
	Cluster: Preference Measures	
68.	I like to know exactly what the rules are at work.	I like to work at a place where people participate in making rules.
	Cluster 6: Esteem Needs	
58.	I can best contribute to an effort when the work is divided up among us.	I can best contribute to an effort when we all work together under someone's direction.
29.	Owning the place I live in is important to making me feel at home.	Personal decoration and arrangements are important to making me feel at home.
30.	It is important to me for people at home to care personally for me.	It is important to me for people at home to do what I ask them to do.
14.	I like to stick to doing familiar things.	I am usually one of the first to try to do new things.
71.	I like to have people care for my personal welfare at work.	I like to be respected for my abilities at work.

Figure C-1

Cluster Analysis of Items Related to Measures

of Contrasting Preferences

(H) = Home Environment (W) = Work Environment



APPENDIX D

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Name ____________________

I.D. No. ____________________

Date ____________________

Social Adjustment Scale

Circle the statement that best describes how the subject is getting along at present.

1. I am:

very happy	moderately happy	neither happy nor unhappy (in between)	moderately unhappy	very unhappy

2. My relations with members of my family are:

very satisfactory	moderately satisfactory	neither satisfactory nor unsatisfactory (just so-so)	moderately unsatisfactory	very unsatisfactory

3. I am:

very satisfied with my job	moderately satisfied	neither satisfied nor dissatisifed	moderately dissatisfied	very dissatisfied with my job

4. My relations at work are:

very satisfactory	moderately satisfactory	neither satisfied nor unsatisfactory	moderately unsatisfactory	very unsatisfactory

5. My relations with members of my own sex are:

very satisfactory	moderately satisfactory	neither satisfactory nor unsatisfactory	moderately unsatisfactory	very unsatisfactory

6. My relations with members of the opposite sex are:

very satisfactory	moderately satisfactory	neither satisfactory nor unsatisfactory (just so-so)	moderately unsatisfactory	very unsatisfactory

7. I am:

never in trouble with the law		occasionally in trouble with the law		frequently in trouble with the law

8. I am:

very easy to get along with	moderately easy to get along with	neither easy nor hard to get along with	moderately hard to get along with	very hard to get along with

9. My mental health is:

very good	moderately good	neither good nor bad	moderately bad	very bad

10. I am getting along:

very satisfactorily	moderately satisfactorily	neither satisfactorily nor unsatisfactorily	moderately unsatisfactorily	very unsatisfactorily

11. I am:

hopeful about the future	moderately hopeful about the future	neither hopeful nor pessimistic	moderately pessimistic	very pessimistic

Name ____________________________
ID No. __________________________
Date ____________________________

Life Events

The following list covers some of the things that sometimes happen to people in the course of their lives. As I read them to you, would you please tell me whether or not each of them has happened in your life during the past 12 months.

1. Change in responsibilities at work
2. Son or daughter leaving home
3. Foreclosure of mortgage or loan
4. Trouble with in-laws
5. Mortgage over $10,000
6. Outstanding personal achievement
7. Change in number of arguments with spouse
8. Wife begin or stop work
9. Change to different line of work
10. Begin or end school
11. Death of close friend
12. Change in living conditions.
13. Change in financial state
14. Revision of personal habits
15. Business readjustment
16. Trouble with boss
17. Gain of new family member
18. Change in work hours or conditions
19. Sex difficulties
20. Change in residence
21. Pregnancy
22. Change in schools
23. Change in health of family member
24. Change in recreation
25. Retirement
26. Change in church activities
27. Marital reconciliation
28. Change in social activities
29. Fired at work
30. Mortgage or loan less than $10,000
31. Marriage
32. Change in sleeping habits
33. Personal injury or illness
34. Change in number of family get-togethers
35. Death of close family member
36. Change in eating habits
37. Jail term
38. Vacation
39. Marital separation
40. Christmas
41. Divorce
42. Minor violations of the law
43. Death of spouse

Severity of Illness Scale

Procedures:

Each subject will be placed in one of the six categories. The placement will be based upon an examination of his/her medical record for the past three months. One physician will rate the subject from these records. He will then check this rating with the provider physician who has been caring for the subject. Any differences in rating will be resolved by the two physicians. The final rating should reflect the most characteristic categorization of the subject over the three-month period. The rating should be recorded by placing the severity of illness category (1-6), and type of illness category letter (A,B,C) beside the subject's name on the provided list of subjects.

Severity of Illness

Category 1	No signs or symptoms of illness.
Category 2	Signs without symptoms. A definite abnormality of cells or metabolic system, but no impairment of normal activities. e.g., orthostatic albuminuria, latent syphilis, small benign naevus, elevated blood sugar or blood pressure without symptoms.
Category 3	Working, with symptoms. Illness causing a definite impairment of one or more organ systems, but little effect on the capacity of the subject to carry out his usual activities. e.g., functional constipation, moderate obesity, early hypertension.
Category 4	Working, but with some modifications of environment. Illness causing serious impairment of one or more organ systems, but little effect on the highest integrative functions so that the subject may carry out usual activities. e.g., active peptic ulcer, diabetes mellitus, hypertension, cardiovascular disease, common cold, vascular headache.
Category 5	Homebound. Illness prevents usual activities but does not prevent all other activities. e.g., measles, moderately severe anxiety, fractured ankle, many episodes of common cold, any cause of absence from work, or bed disability
Category 6	Hospitalized. Illness causing severe impairment of highest integrative functions making it impossible for the subject to carry out any activities other than those directly associated with survival.e.g., meningococcal meningitis, hepatic coma, typhoid, catatonic schizophrenia.

Type of Illness Categories

Category A	Acute, self-limiting - resolving with treatment. e.g., common cold, abortion, gonorrhea, streptococcal sore throat, hepatitis, meningitis, pneumonia, ear infection in children.

Category B	Chronic. e.g., psoriasis, eczema, anemia, hyperthyroidism, gallstones, diabetes, emphysema, arthritis, alcoholism, cirrhosis, schizophrenia, cancer.
Category C	Other.

APPENDIX E

SUMMARY OF RESEARCH ON BEHAVIORAL PREDISPOSITIONS OF ELDERLY PEOPLE

The objective of this research project has been to develop measures of behavioral predispositions to conforming and self-directed behavior for use in research with elderly people. The study has the long-term goal of developing instruments for use in subsequent research on the effects of urban environments on the health and well-being of elderly populations.

According to the conceptual frame of reference for this research, the goal of conforming behavior is to obtain support from the environment and the goal of self-directed behavior is to attain control over the environment. If support is not obtained, it is assumed that individuals experience social isolation, and if control is not attained, it is assumed that individuals experience social press. Thus, predispositions to conforming and self-directed behavior are conceived to mediate relationships between environments and deleterious psychological states.

This research project is intended to be part of a long-range program of research to investigate the effects of urban environmental factors on personal well-being. The major funding for the first stage of research was provided by a grant from the National Science Foundation. In the NSF research project, a laboratory experiment was conducted with 192 student subjects with the objective of developing concepts and measures of the same behavioral predispositions which have been the subject of this research project. The students were given a questionnaire with 102 items measuring self-reported behavior and attitudes about behavior. The students also participate in a game designed to elicit support-seeking and control-seeking behaviors. Behavior emissions were observed and coded. Responses to the questionnaire items were factor analyzed to identify scales measuring behavioral predispositions and the relationships of scales to observed behavior were determined.

A Dominant Scale was found to be the best single scale by the criteria of strength and significance of the relationship to observations of control-seeking and support-seeking behavior in the experiment. The Dominant Scale was positively related to control-seeking behavior and negatively related to support-seeking behavior at the .001 or greater level of significance. A Subordinate Scale was also significantly related to those observed behaviors, but less strongly. In the project funded by the Gerontology Center, the plan was to determine whether the scales developed in the student experiment would represent appropriate measures of the behavioral predispositions among an elderly sample.

The original research plan was to obtain predisposition data by means of questionnaires completed by 150 elderly subjects. This plan was modified so that the data was obtained by personal interviews. This change resulted from recognition that many elderly subjects were unable to complete the relatively long questionnaire without personal assistance. As a result, 102 rather than 150 subjects were interviewed. The subjects were residents of the Harrisburg Standard Metropolitan Statistical Area and were over 55 years of age. In selection of places from which to obtain subjects, special consideration was given to obtaining a reasonable proportion of subjects with at least a high school education and preferably with some college education to facilitate comparison with the college student sample. Otherwise the primary goal was to obtain subjects with variation in personal, social, and environmental characteristics to avoid extreme range restriction. This goal was largely achieved. The study was not designed, however, to be a representative random sample of the elderly population. This would have been an excessively costly procedure for this stage of research.

Field research was carried out by a Man-Environment Relations graduate assistant with aid of an undergraduate student in the gerontological emphasis of Individual and Family Studies. The questionnaire consisted of four major parts with questions concerning the following categories: (1) personal, social, economic, and environmental characteristics; (2) self-report of behavior and attitudes representing measures of behavioral predispositions; (3) social networks of the elderly; and (4) measures of social isolation, social press, morale (Lawton's Philadelphia Geriatric Morale Scale, 1972), and functional health (Rosow's Guttman Health Scale, 1966). Section (3) of the study was designed to provide data for a master's thesis by the graduate assistant for the study. The items in section (2) were identical, with some eliminations, to those which were included in the study of student predispositions.

Two procedures were used in data analysis. The initial procedure was to compare the patterns of responses to behavior predisposition items of elderly subjects with those of students. Factor analysis and Likert scaling were the methods used to compare responses of the two samples. This analysis indicated that the factors in the elderly sample differed substantially from the factors in the students sample, but the Dominant Scale in the student sample represented a valid scale in the elderly sample by Likert scaling criteria. This raised the question of explaining the results of the factor analysis and its discrepancy with the results of the Likert scaling analysis. For this reason, a second type of analysis has been undertaken. The first method was item analysis, comparing distributions of responses to individual items in the two samples. Where differences in distributions were present, variation within the elderly sample were examined to identify possible relationships to personal, social and environmental characteristics. The second method was correlational analysis, in which the relationships of the factors to environmental, social, behavioral, and psychological variables in the conceptual scheme were investigated. The purpose of this analysis was to determine whether the differences between the student and elderly factors might be explained by persistent environment-behavior relationships which were present with the elderly sample.

This analysis is not complete. A considerable amount of data was collected beyond the data specified in the proposal for which data analysis is also still not completed.

Table E-1

Social and Environmental Characteristics of Subjects

Age	N	Sex	N
55 - 64	14	Males	35
65 - 74	46	Females	67
75 and over	40		
Education		Occupational Status	
Less than high school	42	High (Professional, Managers, Technical & kindred workers)	38
High school	21	Medium (Craftsmen & kindred workers)	36
More than high school	37	Low (Operatives, laborers)	29
Marital Status		Residential Companions	
Married	26	Lives alone	69
Widowed	47	Lives with relative	3
Single	26	Lives with spouse	28
Present Retirement Income		Pre-Retirement Income	
Greater than $10,001	21	Greater than $10,001	35
$5,001 to $10,000	27	$5,001 to $10,000	29
Less than $5,000	48	Less than $5,000	28
Adequacy of Present Income Perceived as:		Living Environment	
Low	29	Independent	23
Okay	48	Semi-Independent	50
More than okay	23	Dependent	29

N = 102

Table E-2

Distributions of Responses of Heterogeneous Adult Sample to Items from Subordinate and Dominant Scales

Items[1]	Percentage Selected	
	Often this Way	Seldom this Way
I speak in an authoritative manner. (D)	52	48
People think of me as a direct and forceful person. (D)	46	54
Even if people are difficult, I can get them to change their behaviors. (D)	48	52
In a group of people, my opinions usually carry a lot of weight. (D)	43	61
I can usually get people to go along with me. (D)	72	28
If I find I can't do something, I simply ignore it. (S)	18	82
When I make plans, I can usually make them work. (S - scored negatively)	92	8

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[1] As explained in Chapter IV, individual items were selected for this study rather than whole scales. All Subordinate items were not included.

Table E-3

Factor Analysis of Elderly Sample

Item	Factor Loading	Relation of Item to Predisposition Scales
Factor 1:		
I would rather work in a group where someone directs the actions of each of us.	.77	
There are right ways to behave and you don't have to keep thinking about them--just follow them.	.71	
If at first you don't suceed--try and try again.	.69	
In my personal conduct I try to be flexible.	.68	
In cases of conflict the best thing to do is give in.	.60	Subordinate (positive)
You don't have to keep thinking about the rules--it just happens.	.48	
Factor 2:		
I would rather work for the boss who seeks my advise on matters that affect me.	.73	
When I make plans I can usually make them work.	.71	Subordinate (negative)
Once an effort has begun the most important thing is staying with it.	.65	
I find that arguments upset me.	.60	Dominant (negative)

Item	Factor Loading	Relation of Item to Predisposition Scales
Factor 3:		
People think of me as a direct and forceful person.	.59	Dominant (positive)
I have always felt that the best way to contribute to an effort is to do things exactly by the book.	-.57	Subordinate (positive)
I feel I don't have enough control over the direction my life is taking.	.56	
No matter how hard I try some people do not react to me as I want them to.	.49	
Many times I feel that I have little influence over things that happen to me.	.47	
Even if others are difficult, I can get them to change their behavior.	-.41	Dominant (positive)
Factor 4:		
In a group of people, my opinions carry a lot of weight.	-.74	Dominant (positive)
It is a good idea to get your behavior back within the rules if you've gone beyond them.	-.51	
It is important to have people believe you.	.45	
If a person starts to go beyond the rules, his own feelings are enough to make him return.	-.40	
I'll do something that I don't like if it will retain the good will of those I respect.	.34	

Item	Factor Loading	Relation of Item to Predisposition Scales
Factor 5:		
I tend to be easily influenced by people who speak with conviction.	.61	Subordinate (positive)
I can't understand how some people get so much done.	.42	
If something is going wrong, it's natural to correct your own behavior before anyone notices.	.38	
You sometimes have to fool people to get them to do things your way.	-.36	
If I find I can't do something, I ignore it.	.35	Subordinate (positive)
Factor 6:		
Being able to read the feelings of others is very useful in social situations.	.59	
In the verbal give and take with people, I usually don't have much to say.	.56	
If you want things to go your way, you've got to be able to persuade others to go along.	.51	
If you just try harder, you can usually get any job done.	.46	
Factor 7:		
If I had no control at all over others, it would really bother me.	-.73	
In my day to day life, I accept limits on my behavior without thinking about it.	.57	
Whenever someone I know but don't like approaches me, I step towards them.	.54	
If I am interested in something I usually make a good impression.	.47	

Table E-4

Intercorrelations of Factors and Factors with Measures of Occupational Status in the Elderly Sample

Factors	1	2	3	4	5	6	7
1							
2	.02						
3	.36	.46					
4	-.18	.63	.34				
5	.33	.28	.50	.19			
6	-.18	.72	.26	.62	.26		
7	.15	.65	.46	.69	.32	.54	
Middle class vs. working class occupations	-.49	-.49	-.27	.19	-.13	-.44	-.59

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Table E-5

Correlations of Subordinate Scale Items with Indicators of Goals of Variable Behaviors*

Subordinate Scale Items	Group Direction (1)	Try Something New (2)
When I am exploring a strange place, I prefer to follow others.	.25	-.42
I tend to be easily influenced by people who speak with conviction.	.25	-.27
If I find that I can't do something, I simply ignore it.	.20	-.27
In cases of conflict the best things to do is give in.	.13	-.13
I have always felt the best way to contribute to an effort is do things by the book.	.10	-.17
When I make plans I can usually make them work. (Score negatively)	.20	-.07

[1] I would rather work in a group where someone directs the actions of each of us.

[2] Are you generally one of the first people to try something new or do you wait until you see how it's worked out for other people?

*Student sample N = 251

Table E-6

Correlations of Subordinate and Dominant Scales with Selected Measures of Response Specificity and Generalization

Measures of Response Specificity and Response Generalization	Student Sample N = 251 Dominant Scale Score	Student Sample N = 251 Subordinate Scale Score	Elderly Sample N = 102 Dominant Scale Score
Generally speaking, do you think that every situation is so different that people have adjusted their behavior to each one?	-.20***	.28***	.09
Generally speaking, do you think all situations have enough in common so that general rules and principles of behavior apply to each situation?	-.16**	.06	.10
I act like a different kind of person in different types of situations (such as home, work, around the neighborhood).	n.a.	n.a.	-.22*

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Table E-7

Correlations of Subordinate Scale Items and Response Specificity Item[1]

Subordinate Scale	Response Specificity*	Subordinate Scale Items (1)	(2)	(3)	(4)	(5)
(1) When I am exploring a strange place, I prefer to follow others.	-.20					
(2) I tend to be easily influenced by people who speak with conviction.	.17	.28				
(3) If I find that I can't do something, I simply ignore it.	.25	.26	.25			
(4) In cases of conflict the best thing to do is give in.	.13	.20	.16	.26		
(5) I have always felt the best way to contribute to an effort is to do things by the book.	.10	.18	.18	.18	.26	
(6) When I make plans I can usually make them work. (Scored negatively)	.20	-.12	-.16	-.26	-.14	-.26

*Generally speaking, do you think that every situation is so different that people have adjusted their behavior to each one?

[1] Student sample N = 251

Table E-8

Correlations of Behavioral Measures in Environmental Preference Study With Selected Demographic Characteristics

Behavioral Measures	Demographic Characteristics		
	Education N = 47	Job Autonomy N = 32	Age N = 47
Self-Direction Orientation	n.a.	n.a.	n.a.
Self-Conception Items			
I take a positive attitude toward myself.	.13	.15	-.20
I wish I could have more respect for myself.	-.25*	-.22	.14
Social Orientation Item			
It's all right to do anything you want as long as you stay out of trouble.	-.29*	-.07	-.10
Control Orientation	.29*	.13	.16
Predisposition Items			
I speak in an authoritative manner.	.11	.08	.11
People think of me as a direct and forceful person.	.22*	-.05	.26*
Other Control Items			
Even if people are difficult, I can get them to change their minds.	.26*	-.04	.09
In a group of people, my opinion usually carries a lot of weight.	.11	.04	-.05
I can usually get other people to go along with me.	.03	.07	.03

* $p \leq .05$

Table E-9

Measures of Work Environment Preferences Significantly Related to Both Positive and Negative Attitudes About Self

Work Environment Preference Items		Pearson's r	
Statements Related to: "I take a positive attitude toward myself."	Statements Related to: "I wish I had more respect for myself."	Positive Attitude	Desire Respect
I find that I work best where I have space for my own activities.	I find that I work best when in a place where people are always coming and going.	-.28*	.42**
I find that I like to work closely with one or two people who want to accomplish the same things.	I find that I like to work with a group of people who feel the same way about things as I do.	-.52***	.25*
I like to know exactly what the rules are at work.	I like to work at a place where people participate in making rules.	-.30*	.46***

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

N = 32 (Urban Sample)

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Table E-10

Home Environment Preference Measures Significantly and Positively Related to Taking a Positive Attitude Toward Self

Preference Statements Most Frequently Selected by Respondents with Positive Attitudes Toward Self (versus statement paired with selected statement)	Pearson's r
I like to be able to count on people being together at home at certain times so that they are available (versus people coming and going).	.29*
I enjoy seeing everyone in the household together at the same time (versus always something going on).	.30*
It is important to me for people at home to do what I ask them to do (versus important for people to care personally for me).	.25*
I enjoy entertaining people in my home that I know well and like (versus people who like and respect me).	.22*
I think people should be able to do anything they want to their property even if their next door neighbors dislike it (versus avoiding doing things to property neighbors dislike).	.24*

* $p \leq .05$

N = 47

Table E-11

Home Environment Preference Statements Significantly and Positively Related to Wishing Had More Respect for Self

Preference Statements Most Frequently Selected by Respondents Wishing They Had More Respect for Selves (versus statement paired with selected statement)	Pearson's r
It would be helpful to live near a small store where I know people and I can get most of the daily things I need (versus near a large shopping center I can get everything I need).	.25*
In my home life, I enjoy being around people who feel the same way about things as I do (versus one or two people with same interests).	.30*
It is more important in marriage for husband and wife to have the same kind of family background than to be interested in doing the same things (versus more important being interested in doing the same things than having same family background).[1]	.23*
I think people should be able to do anything they want with their own property even if their neighbors dislike it (versus avoiding doing things to their property their neighbors dislike).	.27*

* $p \leq .05$

N = 47

[1] This item has poor distribution, but is included in this table because it contributes to interpretation of other items.

Table E-12

Work Environment Preferences Significantly and Positively Related to Measures of Dominant Predispositions

Work Environment Preference Statements Selected by Respondents with Dominant Predispositions (versus statement paired with selected statement)	Speak Authoritatively[1]	Direct and Forceful[2]
It is easier to plan my work if I come to work and leave about the same time (versus easier to get to work).	.29*	.53***
It would be helpful if I could decorate the place where I work with my things (versus having a space everyone considered my own place to work)	.36*	.19
I enjoy working at a place where people are good personal friends (versus a place people do what you want them to do).	.29*	.16
I like to have people care for my personal welfare at work (versus respect for my abilities).	.06	.30*
Sometimes I wish that I could have more personal contact with new people at work (versus work with a small group of people in one place).	.09	.28*
It would make more work more pleasant if people dropped into see me once in a while (versus have place people don't walk in without invitation).	.01	.28*
Sometime the work has to be done more slowly than I like to get good results (versus faster than like).	.26*	.06

* $P \leq .05$ (Pearson's correlation coefficients)
*** $p \leq .001$ (Pearson's correlation coefficients)

N = 32

[1] I speak in an authoritative manner.

[2] People think of me as a direct and forceful person.

Table E-13

Home Environment Preference Statements Significantly and Positively Related to Measures of Dominant Predispositions

Preference Statements Most Frequently Selected by Respondents with Dominant Predispositions (versus statements paired with selected statement)	Speak Authoritatively[1]	Direct and Forceful[2]
I think that people should avoid doing things to their property their neighbors dislike (versus should be able to do anything they want).	.39*	.37*
Good neighbors are always glad to see you and are interested in what you are doing (versus mind their own business).	.35*	.26*
A good elected official ought to come around to your home once and a while and see how you are doing (versus leave you alone).	.28*	.33*
I like a household where everyone decides themselves what they will do each day (versus where activities coordinated).	.09	.26*
I like to live in a neighborhood where everybody is relaxed and informal with one another (versus know exactly what to expect).	-.05	.21*

* $p \leq .05$ (Pearson's correlation coefficients)

N = 47

[1] I speak in an authoritative manner.

[2] People think of me as a direct and forceful person.

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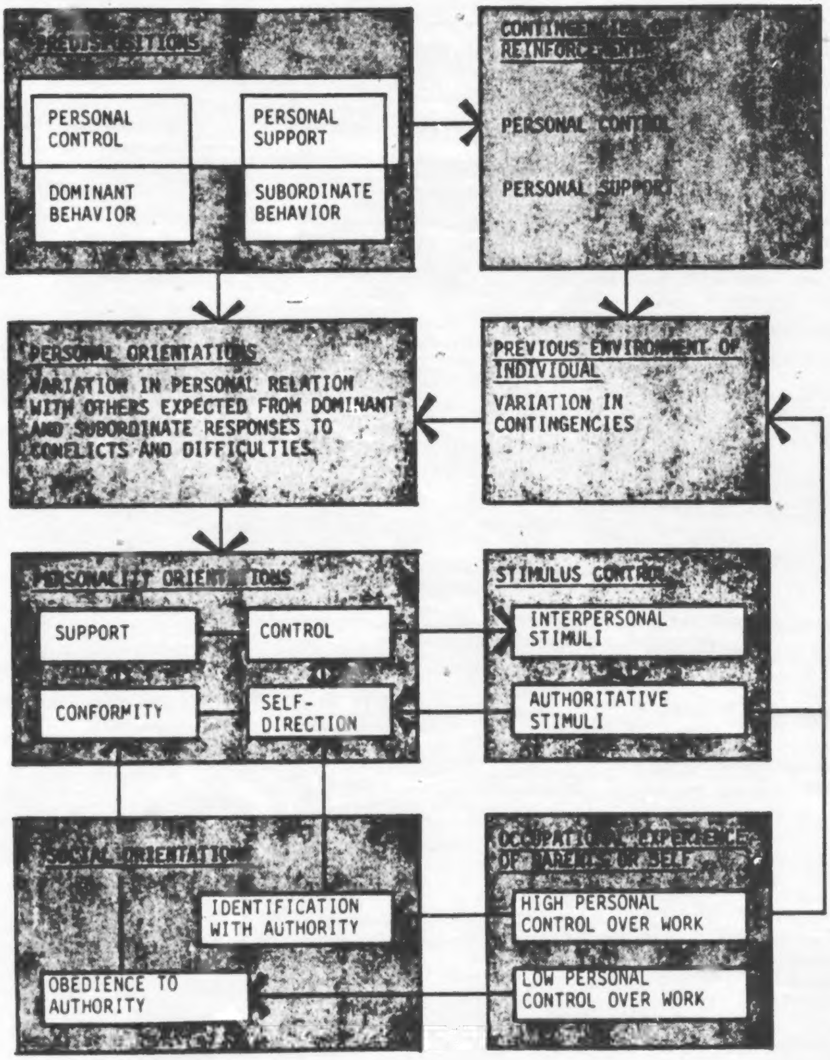
Figure E-1

Concept of Relations Among Orientations


PREDISPOSITIONS
PERSONAL CONTROL
PERSONAL SUPPORT
DOMINANT BEHAVIOR
SUBORDINATE BEHAVIOR
CONTINGENCIES OF REINFORCEMENT
PERSONAL CONTROL
PERSONAL SUPPORT
PERSONAL ORIENTATIONS
VARIATION IN PERSONAL RELATION WITH OTHERS EXPECTED FROM DOMINANT AND SUBORDINATE RESPONSES TO CONFLICTS AND DIFFICULTIES
PREVIOUS ENVIRONMENT OF INDIVIDUAL
VARIATION IN CONTINGENCIES
PERSONALITY ORIENTATIONS
SUPPORT
CONTROL
CONFORMITY
SELF-DIRECTION
STIMULUS CONTROL
INTERPERSONAL STIMULI
AUTHORITATIVE STIMULI
SOCIAL ORIENTATIONS
IDENTIFICATION WITH AUTHORITY
OBEDIENCE TO AUTHORITY
OCCUPATIONAL EXPERIENCE OF PARENTS OR SELF
HIGH PERSONAL CONTROL OVER WORK
LOW PERSONAL CONTROL OVER WORK

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